



THE NORTH-SOUTH AGENDA

PAPERS • FIFTY-FOUR

JANUARY 2002

PROTECTING THE ENVIRONMENT WHILE OPENING MARKETS IN THE AMERICAS

William Krist

Negotiations to establish a Free Trade Area of the Americas (FTAA) are scheduled to conclude in 2005. The Market Access Negotiations are a major element of this effort, and they would remove all tariff and nontariff barriers to trade among the 34 participating countries on all nonagricultural products, including forest and mining products, fish, and manufactured goods. This study considers the economic and environmental implications of the Market Access Negotiations, explaining how this agreement would promote economic growth in the Americas. The paper also raises environmental concerns and recommends that during the trade negotiations, parallel environmental negotiations be launched to inform trade negotiators of potential problems that can be addressed in the trade agreement, on the basis of environmental impact assessments, in order to promote better environmental stewardship in the Americas.

**PROTECTING THE ENVIRONMENT
WHILE OPENING MARKETS
IN THE AMERICAS**

William Krist

 —The Dante B. Fascell—
North-South Center
UNIVERSITY OF MIAMI
1500 Monza Avenue, Coral Gables,
Florida 33146-3027

NORTH-SOUTH AGENDA PAPERS • NUMBER FIFTY-FOUR

The mission of The Dante B. Fascell North-South Center is to promote better relations and serve as a catalyst for change among the United States, Canada, and the nations of Latin America and the Caribbean by advancing knowledge and understanding of the major political, social, economic, and cultural issues affecting the nations and peoples of the Western Hemisphere.

The views expressed in this Agenda Paper are those of the author(s), not the North-South Center, which is a nonpartisan public policy and research institution.

January 2002

ISBN 1-57454-114-5
Printed in the United States of America

© 2002 University of Miami. Published by the University of Miami North-South Center. All rights reserved under International and Pan-American Conventions. No portion of the contents may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopying, recording, or any information storage or retrieval system, without prior permission in writing from the publisher.

Inquiries regarding ordering additional copies of this paper or information on other North-South papers should be addressed to the North-South Center Press, University of Miami, 1500 Monza Avenue, Coral Gables, Florida 33146-3027, U.S.A. Issues are available for US\$10.00 per copy. Call (305) 284-8984, fax (305) 284-5089, or e-mail: soniacon@miami.edu. The complete list of the Agenda Papers series can be found on the North-South Center web site, <<http://www.miami.edu/nsc/>>.

PROTECTING THE ENVIRONMENT WHILE OPENING MARKETS IN THE AMERICAS

William Krist

EXECUTIVE SUMMARY

Market Access Negotiations are a major element of the efforts to create a Free Trade Area of the Americas (FTAA) by 2020. If successful, these negotiations will remove all tariff and nontariff barriers to trade among the 34 participating countries on all nonagricultural products, including forest and mining products, fish, and manufactured goods.¹

Removal of these tariff and nontariff barriers would substantially increase economic growth in the Americas. Environmentalists worry that this will also substantially add to environmental stress and degradation in the region. This paper attempts to make some preliminary assessments of the trade, economic, and environmental implications of the Market Access Negotiations.

The Market Access Group is one of nine elements of the negotiations for a Free Trade Area of the Americas. The other eight negotiating groups are Agriculture; Services; Investment; Intellectual Property Rights; Government Procurement; Subsidies, Antidumping and Countervailing Duties; Competition Policy; and Dispute Settlement. However, because of the enormous product range and number of issues covered, the Market Access Group is one of the most important elements of the entire negotiations.

While this analysis focuses on the Market Access Group, all nine negotiating groups are moving forward in a parallel manner. The work of all nine groups is interrelated and will ultimately form one agreement that will liberalize trade in products, agriculture, and services and set out the rules for investment, government procurement,

intellectual property protection, and the rules for competition, subsidies, and dumping.

The Market Access Negotiations are to be completed no later than January 2005, as is the work of all nine groups. This will allow all barriers to trade enforced by the 34 participating countries² to be removed completely by 2020.

Free trade agreements have significant economic and environmental impacts. For example, the North American Free Trade Agreement (NAFTA) is considered to have had significant impacts, although analysts disagree over the nature and extent of these impacts. A free trade area encompassing 34 nations in the Americas would have even greater impacts on both the economy and the environment.

To consider these effects, this analysis first examines the scope of the Market Access Negotiations. The literature on the impact of expanded trade on the economy and the environment is then reviewed, and the forest products and iron and steel sectors are examined in more detail to assess likely impacts in those two key areas.

The major conclusions and recommendations of this study are listed in summary form below. More specific conclusions and recommendations can be found in the body of this Agenda Paper.

Conclusions

1. *If the Market Access Negotiations are successful in eliminating trade barriers on manufactured, mining, forest, and fisheries products, this would*

William Krist is a Senior Policy Fellow at the Woodrow Wilson Center in Washington, D.C., and President of Metis International Consulting. Prior to his work at the Woodrow Wilson, William Krist was Senior Vice President at the American Electronics Association and Assistant U.S. Trade Representative for Industrial Policy in Washington, D.C., from 1979 to 1984. A congressional fellow for Senator William Roth and Congressman Sam Gibbons, he also directed the U.S. Department of Commerce's work on the Tokyo Round from 1975 to 1979. The author wishes to express his appreciation to the following individuals, among others in the private sector and government, for reading and commenting on previous drafts of this paper: Paul Faeth, World Resources Institute; Jake Caldwell, National Wildlife Federation; Robert Taylor, International Center for Journalists; Dr. Jennifer Bremer, Kenan Institute; and John Audley, Carnegie Endowment for International Peace.

lead to significant new trade among the 34 parties of the FTAA.

While substantial trade in products covered by the Market Access Negotiations currently takes place throughout the Americas, significant trade barriers remain. Removing these barriers will lead to additional significant increases in trade. Five regional trade agreements in the Americas have made progress in removing barriers within each

REGIONAL TRADE AGREEMENTS IN THE AMERICAS

- The Southern Common Market (Mercado Común del Sur — MERCOSUR/Mercado Comum do Sul — MERCOSUL). Members: Argentina, Brazil, Paraguay, and Uruguay. Associate Members: Bolivia and Chile.
- The North American Free Trade Agreement (NAFTA). Members: Canada, Mexico, and the United States.
- The Andean Community of Nations (Comunidad Andina de Naciones — CAN), also known as the Andean Group (Grupo Andino) or the Andean Pact (Pacto Andino). Members: Bolivia, Colombia, Ecuador, Peru, and Venezuela. Panama has observer status, and Chile withdrew in 1976.
- The Central American Common Market (Mercado Común Centroamericano — CACM). Members: Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.
- The Caribbean Community and Common Market (CARICOM). Members: Antigua and Barbuda, Bahamas,* Barbados, Belize, British Virgin Islands,** Dominica, Grenada, Guyana, Jamaica, Montserrat, Saint Christopher and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, and Turks and Caicos Islands.**

* The Bahamas is a member of the Community but not the Common Market.

** The British Virgin Islands and the Turks and Caicos Islands were granted associate membership. Haiti has been accepted as a full member of the Community, though terms of its membership are pending.

bloc. The names of the agreements and member nations are listed here at first mention. Later in this paper, more information is given on each agreement.

However, a successful Market Access Agreement would open up trade among the five blocs, address a number of barriers not currently addressed by all of the blocs, and help prevent marginalization of the three countries that are not full members of any of the five trade blocs in the Americas: The Bahamas, Dominican Republic, and Haiti.

2. This expanded trade would result in a significant economic boost to the 34 countries participating in the FTAA.

Economic theory and past experience, for example, with NAFTA, indicate that expanded trade will lead to greater efficiencies in production and significant economic growth. While expanded economic growth can be confidently predicted, past experience does indicate that it is impossible to predict accurately the precise degree to which trade and growth will be affected.

3. More rapid economic growth can help countries better address environmental needs, but it also will likely create some additional stress on the environment.

Economic growth will enable the people in the 34 participating nations to have a better standard of living, and it can help the countries of the Americas protect the environment more effectively, as additional resources can be devoted to environmental stewardship. In fact, some studies indicate that environmental degradation increases at early stages of growth and then decreases.

While growth has positive aspects, it is also likely to increase environmental stress in specific hot spots. For example, expanded trade and more rapid economic growth are likely to lead to more rapid deforestation, primarily because they will increase demand for agriculture and minerals as well as more harbors and roads. Increased trade in iron and steel could create some environmental "hot spots," such as increased demand for coke (coal processed to heat iron ore to make steel) in countries such as Colombia that might have difficulty addressing the environmental implications of this expanded production. Because the costs of complying with environmental standards are high, removal of trade barriers might also provide some incentives for expanded production in countries with lower environmental standards, although this

is not at all certain, as transportation costs for steel are high.

Recommendations

1. *Eliminating Market Access barriers among the 34 countries participating in the FTAA should be aggressively pursued, although liberalization must be done in a way that does not weaken environmental protection.*

Some environmentalists have recommended postponing trade negotiations until progress can be made in addressing the environmental problems in the Americas.³ However, as noted, trade liberalization expected as a result of the Market Access Negotiations will substantially promote economic growth, particularly for the least developed countries in the Americas. This expanded growth can significantly benefit the 800 million people living in the 34 countries participating in these negotiations, and expanded economic welfare can help provide resources to improve environmental stewardship. Additionally, the FTAA negotiations ensure that political leaders will be paying attention to hemispheric issues, which provides a window of opportunity for improving regional environmental management. Without the stimulus of the FTAA, it is likely that no major effort to strengthen environmental stewardship of the Americas will be undertaken.

2. *Sustainability assessments of the implications of eliminating trade barriers in the Market Access Negotiations for all 34 countries that will participate in the FTAA should be undertaken immediately.*⁴

At this time, the United States, Canada, and Chile are examining the environmental implications of the FTAA on their own countries. However, no assessment is currently being done of environmental implications for the Americas as a whole. Sustainability assessments of the impact of the FTAA on each of the participating countries need to be undertaken immediately, so that they are in place shortly after detailed negotiations begin in May 2002. With such a road map, trade negotiators can avoid some potential pitfalls that could worsen environmental problems significantly, and in some areas they can use the trade agreement to advance the region's economic and environmental interests.

Some in the business community are opposed to trying to assess the environmental implications of the FTAA at this time. Thomas Niles, president of the U.S. Council on International Business, said,

"We strongly recommend that the George W. Bush Administration reconsider the Clinton Administration's decision to undertake an environmental review of the FTAA at this time. We urge U.S. agencies to ... not be diverted by secondary efforts to calculate the incalculable."⁵

However, the argument not to perform sustainability assessments at this time misses the point. The Bush Administration has wisely rejected advice not to undertake an analysis of the environmental impacts of an FTAA on the United States. Now what is needed is to broaden this to consider environmental impacts on the Americas as a whole.

3. *The FTAA Market Access Agreement needs to defer to appropriate Multilateral Environmental Agreements that have been developed to address environmental problems in the Americas and elsewhere, where there is overlap.*

The Market Access Negotiations will create additional environmental stresses in a number of areas that are addressed by Multilateral Environmental Agreements (MEAs), including the International Tropical Timber Agreement, the Protocol on Substances that Deplete the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, the Persistent Organic Pollutants Convention, and the Prior Informed Consent Protocol. The FTAA agreement needs to acknowledge these agreements explicitly and ensure that it does not interfere with their operations. Parallel environmental negotiations should seek to improve the effectiveness of these agreements in the Americas, for example, through capacity building and expanding membership as appropriate.

4. *Negotiations to improve the environment of the Americas should be launched immediately, parallel to the FTAA Market Access Negotiations. The focus of countries participating in the FTAA Market Access Negotiations should not be only on offsetting potential environmental problems from the market access agreements, but rather to strengthen management of our environmental responsibilities in the Americas.*

Expanded market access within the Americas will increase environmental stresses in specific areas. These "hot spots" will be in heavily polluting industries, and the poorer countries in the hemisphere will be the least well equipped to deal with these problems. While it is not possible at this time to anticipate all of these "hot spots,"

many can be anticipated, and steps can be taken to offset potential problems.

These parallel negotiations should agree on specific ways to prevent any environmental degradation that has been identified by environmental assessments. Additionally, specific problems identified by the environment ministers that would be exacerbated by the trade liberalization would be notified to the trade negotiators so that problems related to trade would be resolved in that forum. Moreover, the parallel negotiations on the environment might develop a financial mechanism to assist poorer countries in meeting the challenges of expanded trade, as was done with development of the North American Development Bank (NADBank) with NAFTA. These parallel negotiations could also identify ways to promote good environmental stewardship of the Americas.

These parallel negotiations could be led by environmental ministers and should interact closely with the trade negotiations themselves. They should conclude in the same time frame as the trade negotiations, so that governments can consider both economic and environmental implications of the agreements at the same time. While the two sets of negotiations are not formally linked to one another, holding both sets of negotiations simultaneously will ensure that negotiators consider the broad implications of their agreements.

5. Negotiators need to make clear that it is not the intent of the FTAA negotiations to include trade sanctions as a tool to enforce improved environmental standards in the Americas.

Some environmentalists have advocated tying environmental provisions, such as a requirement for upward harmonization of environmental standards, to trade sanctions.⁶ However, all of the United States' FTAA negotiating partners have opposed tying consideration of environmental issues to potential trade sanctions. For example, former Trade Minister of Mexico Herminio Blanco is "adamant that Mexico and other nations would not accept the inclusion of environmental and labor guarantees in any free-trade pact," which he categorizes as "protectionism by other means, aimed at countries with lower standards of living."⁷ Similarly, the Ministerial Declaration from the meeting held in Buenos Aires, Argentina, on April 7, 2001, reflected this view. It noted, "Most Ministers recognize that the issues on environment and labour should not be utilized as conditionalities nor subject to disciplines, the noncompliance of which can be subject to trade restrictions or sanctions."

Concern that environmental measures might be tied to the trade agreement with potential sanctions for enforcement has led many FTAA countries to oppose even considering the environmental implications of the FTAA agreement. However, as described in this analysis, consideration of environmental impacts is necessary, as the market access agreement will have substantial implications for the environment.

To move past this stalemate, the idea of using sanctions to enforce environmental standards should be discarded, and negotiators should focus instead on considering environmental issues in parallel side agreements, as was done in NAFTA. Several countries, such as Chile, favor this approach.

PROTECTING THE ENVIRONMENT WHILE OPENING MARKETS IN THE AMERICAS

William Krist

The FTAA: Moving Forward

The negotiations for an FTAA represent a historic opportunity to implement an agreement that promotes trade and growth, environmental stewardship, and economic development. Each of these objectives is equally important, and none should be sacrificed for the others. It is time for the fruitless stalemate among governments and the business and environmental communities to end. It is time to seize the historic opportunity offered by the FTAA negotiations to improve living and environmental standards.

The issue of advancing the Western Hemisphere's economic interests while protecting the environment is not a zero sum game. The fact is that we can accomplish these goals simultaneously.

The Market Access Negotiations

To understand better the likely trade, economic and environmental implications of the FTAA Market Access Negotiations, we will first review their scope and approach. Following this consideration, the extent of trade barriers being addressed and what their removal might mean for trade expansion will be considered. And then economic and environmental theories will be reviewed to see what the implications of expanded trade might be for the economy and the environment.

Next, two sectors will be examined in more detail, specifically the wood products sector and the iron and steel sector. The approach for this examination has been to interview experts in the sectors and the available literature, as well as review trade barriers in these sectors.⁸ We will also look briefly at the areas of environment and health, to consider possible liberalization in products that are expected to benefit the economies of the 34 participating countries as well as the environment (the "win-win" items).

As the Market Access Group is also responsible for negotiations on Technical Barriers to Trade (TBT standards), we will consider the expected impact of these negotiations. Finally, we will look at implications for Multilateral Environmental Agreements (MEAs) raised by the Market Access

Negotiations and possibilities for parallel negotiations on strengthening the environment that could be undertaken.

The Market Access Negotiations

The negotiations for an FTAA are intended to result in elimination of all trade barriers in goods and services among the 34 countries participating in the planned FTAA. At the meeting of the heads of state of the 34 participating countries in Quebec City, on April 20-22, 2001, it was agreed to conclude the negotiations no later than January 2005, so that the agreement could go into force no later than December 2001. It is intended that all barriers to trade in the Americas will be completely eliminated by 2020.

To carry out the negotiations, nine negotiating groups were established, as listed at the beginning of this paper.

There is a great deal of overlap between the work of the Market Access Group and the other eight negotiating groups. For example, success in opening up investment will play a major role in determining the extent to which companies are able to take advantage of new market access opportunities. While some products, such as wood and fish, are under the purview of the Market Access Group, the Agriculture Group will address sanitary and phytosanitary measures (SPS), which will have a significant impact on trade in these products. The Services Group's progress has enormous implications for the Market Access Group's results; for example, advertising opportunities will impact market access benefits. Because there is a great deal of overlap among the nine groups, the FTAA agreement is to be a single, comprehensive, and balanced undertaking.

The negotiating groups have all prepared initial drafts. The extensive disagreements on approach among the 34 participants at this stage of the negotiations are all contained in bracketed language in the draft texts. In fact, because there are still a great number of issues to be resolved, most of the language in the draft Market Access text⁹ is bracketed. These draft texts were reviewed by Ministers at their meeting in Buenos Aires on

April 6-7, 2001, and now form the bases from which negotiations are proceeding. The negotiating groups will attempt to reduce differences in the texts to the maximum extent possible to form a second draft for the next ministerial meeting, to be held no later than October 2002.

The Negotiating Group on Market Access is to submit recommendations on the methods and modalities for tariff negotiations by April 1, 2002, so that negotiations on specific market access commitments can be initiated by the May 15, 2002, deadline. By April 1, 2002, the bracketed Market Access text is to have evolved into agreed methods and modalities for the negotiations. These will include such topics as the base rate from which tariffs will be reduced (such as bound or applied), tariff nomenclatures, the timetable and pace of tariff elimination, the reference period for trade data to measure the importance of a concession, methodology to grant tariff preferences, the relationship with subregional arrangements, nontariff measures, and so forth. Given the heavily bracketed text now available, it is impossible to predict exactly what the negotiating modalities will be; nonetheless, it is possible to see what the broad outlines will probably be.

The purview of the Negotiating Group on Market Access (NGMA) includes nonagricultural tariffs and nontariff barriers, customs barriers and procedures, rules of origin for products traded among the FTAA countries,¹⁰ safeguards,¹¹ and standards.

The FTAA agreement will have to be consistent with World Trade Organization rules, particularly Article XXIV that governs free trade area agreements. Article XXIV specifies that “substantially all” trade barriers must be eliminated within a free trade area such as the FTAA. “Substantially all” has never been precisely defined, but, in practice, this requirement will mean that all market access barriers will need to be eliminated unless there is an acceptable justification for retention.¹²

Access issues, which include tariffs, nontariff measures, and customs procedures, will determine the extent to which real businesses operating in the real world will be able to expand sales in other country markets. For example, a tariff reduction can be completely offset by a change in a nontariff measure. Tariff barriers are transparent and straightforward in their impacts and less trade distorting than import quotas.

The United States has proposed that tariffs be eliminated in accordance with three different time schedules. For one category or “basket,” tariffs would be eliminated immediately upon entry into force of the FTAA. A second basket of products would see tariffs phased down over five years, and the third would be a 10-year period.¹³ All countries would include the same proportion of its imports in each of these three categories under the U.S. proposal.

In addition to tariffs, a number of countries impose special taxes on imports, which will also be addressed in the Market Access Negotiations. For example, Argentina imposes a statistics fee of 3 percent on noncapital goods, a 0.5 percent customs fee, and a 3 percent anticipated profits tax on all consumer goods.¹⁴ Many countries also impose value added taxes (VATs) on imports, which are also applied to domestically produced goods. VATs will probably not be addressed because they are World Trade Organization (WTO)-compatible, and countries historically have been unwilling to consider their VAT rates in trade negotiations. However, because VAT taxes are generally applied to the landed value of goods, reducing tariffs would have the effect of reducing VAT rates.

Other nontariff barriers that impede trade can be converted to an equivalent tariff effect for purposes of negotiations. However, because of the nature of these barriers, they can also have somewhat different types of commercial and environmental distortions that really cannot be quantified. For example, a Mexican requirement that paper products for retail sale must meet labeling requirements, such as marking, language, and instructions, will limit trade, but these are difficult to measure precisely. Customs barriers, such as pre-shipment inspection requirements, valuation, port charges, and so on, primarily have the effect of increasing the effective tariff rate.

Standards can also be a nontariff measure and will be considered by the Market Access Group. For example, a specific standard may limit or block trade in specified products. Further, widely differing standards requirements between and among countries can add enormously to costs for both business and administering authorities.

In addition to affecting market access, however, standards also have important regulatory implications. Not surprisingly, a number of environmentalists have noted specific concerns with possible agreements in the TBT area. Domestic regu-

latory bodies and voluntary standards bodies use standards to protect health, safety, and the environment. The environmentalists' concern is that an agreement could weaken existing standards or limit the ability of FTAA member countries to protect health, safety, and the environment in future setting of standards. Environmentalists want to ensure that FTAA countries can continue to set levels of health, safety, and environmental protection higher than those provided by international standards, if they so wish.

Some certification schemes have been developed to promote good environmental stewardship, such as certification for sustainable forest management. Environmentalists are concerned that Market Access Agreements could undermine such certification schemes.¹⁵

Because technical barriers and standards have different impacts from other market access issues, they will be considered separately in this analysis in a later section on TBTs.

Potential Impact on Trade

If the Market Access Negotiations were to be successful, would that lead to a substantial increase in trade? This question has to be answered before the possible economic and environmental implications of the Market Access Negotiations can be assessed.¹⁶

As trade barriers in many of the participating nations are high, elimination of these barriers would have a significant impact by expanding trade. As can be seen from the following table, tariffs for manufactured products average 10 percent or higher for 11 of the 20 countries in the Americas for which World Bank data is available. Tariffs over 10 percent are generally considered to be a significant barrier to market access, because they serve to depress economic demand, as the cost of the tariffs is built into the price of the goods sold to the consumer.

Table 1. Manufactured Product Tariffs¹⁷

Argentina	11.0%	Honduras	7.5%
Bolivia	8.9%	Jamaica	16.8%
Brazil	13.9%	Mexico	10.0%
Canada	2.7%	Nicaragua	10.3%
Chile	10.0%	Paraguay	9.0%
Colombia	11.6%	Peru	12.9%
Costa Rica	3.0%	Trinidad & Tobago	17.8%
Ecuador	12.9%	United States	4.2%
El Salvador	6.0%	Uruguay	4.7%
Guatemala	7.6%	Venezuela	12.6%

Source: World Bank, 1999, *World Development Indicators*, 236-238.

However, within the Americas, there are five regional trade-liberalizing agreements that have already opened trade among the participating countries to varying degrees. Accordingly, the FTAA Market Access Agreement would have less impact than Table 1 would suggest.

The main regional trade agreements in effect in the Americas are the following:

- The Southern Common Market (MERCOSUR/ MERCOSUL) is made up of Brazil, Argentina, Uruguay and Paraguay, with Chile and Bolivia as associate members. MERCOSUR is a customs union with a common external tariff, and eventually it envisions free movement of labor and coordinated macroeconomic policies. Trade among MERCOSUR member countries¹⁸ has quadrupled since its creation in 1991 and as of 2001 amounted to more than \$20 billion per year. MERCOSUR is the world's third largest market, after the European Union and NAFTA.
 - The North American Free Trade Agreement (NAFTA) was implemented in 1994 among Canada, the United States, and Mexico. Canada and the United States have been duty free since January 1, 1998, and duties on virtually all NAFTA-originated goods traded among the three countries will be eliminated by 2003.
 - The Andean Community of Nations (CAN), also called the Andean Pact, includes Bolivia, Colombia, Ecuador, Peru and Venezuela. The common external tariff went into effect in February 1995 for Venezuela, Colombia and Ecuador. The United States has provided tariff benefits for the Andean Community on some 6,000 products, not including textiles, apparel, and many other key products.
 - The Central American Common Market (CACM) includes Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama; Costa Rica has suspended its CACM tariff reduction program.
 - The Caribbean Common Market (CARICOM) includes Antigua and Barbuda, Bahamas,* Barbados, Belize, British Virgin Islands,** Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, and the Turks and Caicos Islands.**
- * The Bahamas is a member of the Community but not the Common Market.
- ** The British Virgin Islands and the Turks and Caicos Islands were granted associate membership. Haiti has been accepted as a full member of the Community, though terms of its membership are pending.

Table 2. Regional Trade Blocs

Country	Regional Bloc	Per Capita GNP
Antigua and Barbuda	CARICOM	\$8,450
Argentina	MERCOSUR	\$8,030
Bahamas	None	na
Barbados	CARICOM	na
Belize	CARICOM	\$2,660
Bolivia	MERCOSUR* and Andean	\$1,010
Brazil	MERCOSUR	\$4,630
Canada	NAFTA	\$19,170
Chile	MERCOSUR*	\$4,990
Colombia	Andean	\$2,470
Costa Rica	CACM	\$2,770
Dominica	CARICOM	\$3,150
Dominican Republic	None	\$1,770
Ecuador	Andean	\$1,520
El Salvador	CACM	\$1,850
Grenada	CARICOM	\$3,250
Guatemala	CACM	\$1,640
Guyana	CARICOM	\$780
Haiti	None	\$410
Honduras	CACM	\$740
Jamaica	CARICOM	\$1,740
Mexico	NAFTA	\$3,840
Nicaragua	CACM	\$370
Panama	CACM	\$2,990
Paraguay	MERCOSUR	\$1,760
Peru	Andean	\$2,440
St. Kitts and Nevis	CARICOM	\$6,190
St. Lucia	CARICOM	\$3,660
St. Vincent	CARICOM	\$2,560
Suriname	CARICOM	\$1,660
Trinidad and Tobago	CARICOM	\$4,520
Uruguay	MERCOSUR	\$6,070
United States	NAFTA	\$29,240
Venezuela	Andean	\$3,530

Source: Population Reference Bureau, 2000, *2000 World Population Data Sheet*, June.

*Bolivia and Chile are associate members of MERCOSUR.

**The British Virgin Islands and the Turks and Caicos Islands are associate members of CARICOM.

Intra-agreement trade is relatively small for the Andean Community and CARICOM.¹⁹ For CARICOM, total intra-regional trade accounts for 14.3 percent of the region's total exports, while for the Andean Community, intra-regional trade is only 11.7 percent of exports. The comparable figure for CACM is 20.9 percent and for MERCOSUR is 24.8 percent.

As can be seen from Table 2, three countries participating in the FTAA negotiations are not full members of any of the regional blocs. Each of these non-bloc members has a per capita income of less than US\$2000.

In addition to the regional trading blocs, there are many bilateral and preferential agreements, such as the Canadian-Chile trade agreement, free trade agreements with some 12 other countries in the Americas negotiated by Mexico, the U.S. generalized system of preferences (GSP), the Caribbean Basin Initiative (CBI), the Pharmaceutical Agreement preferences, and preferential agreements between the Caribbean states and Canada.

In analyzing the likely trade effects of the Market Access Negotiations, it is important to note that trade in products covered by these negotiations is already significant, as can be seen in Table 3.

While trade is already considerable, eliminating market access barriers within the Americas would still significantly expand trade for the following reasons:

1. Tariff rates over 10 percent are generally considered to be trade restrictive; eliminating these barriers as well as nontariff barriers will open significant trade opportunities.
2. The three countries not now party to any of the major duty-free blocs in the Americas as full members would gain access to all markets.
3. Because all barriers between the 34 nations would be eliminated, the Market Access Agreement would go beyond the liberalization in effect for the Andean Pact, CACM, and CARICOM.
4. It would open trade among MERCOSUR, NAFTA, the Andean Pact, CACM, and CARICOM.

While it is clear that successful Market Access Negotiations would lead to a substantial increase in trade at a macro level, the impact of trade liberalization will vary from country to country and sector to sector. Distance is a factor in determining the extent to which elimination of trade barriers expands trade. Obviously, when countries are far

Table 3. Importance of Trade*Trade in Manufactured Products as percent of GDP*

Argentina	6.7%	Honduras	15.7%
Bolivia	10.2%	Jamaica	26.6%
Brazil	5.2%	Mexico	30.5%
Canada	40.0%	Nicaragua	12.4%
Chile	11.0%	Paraguay	7.5%
Colombia	5.5%	Peru	6.1%
Costa Rica	28.1%	Trinidad and Tobago	22.8%
Ecuador	7.1%	United States	16.5%
El Salvador	10.2%	Uruguay	10.9%
Guatemala	10.0%	Venezuela	10.8%

Source: World Bank, *World Development Indicators*, computed from data on pp. 210 to 217 and 320 to 323.

apart, such as Argentina and Canada, transportation costs of bulky, difficult to ship products would have a significant effect on trade and would nullify the potential impact of duty reductions for such items. Proximity is important in other ways, too, including easier travel and promoting understanding of the neighboring market. In addition to distance, existence of a common culture or language will have an impact on the extent to which elimination of barriers expands trade.

Another major factor in considering likely trade effects by country, of course, is the degree to which barriers currently block trade. Based on levels of current barriers that would be removed by successful negotiations and existing free trade arrangements, the following are some examples of changes by country that would seem likely:

- Brazil's imports from North America and non-MERCOSUR countries, such as Venezuela, Jamaica, and Ecuador, would likely increase, while imports from MERCOSUR countries, such as Argentina, would likely stay at current market share levels, or might even be displaced by another Western Hemisphere supplier.
- Venezuela, Jamaica, and other countries that are not members of MERCOSUR would likely import considerably more from Brazil, Argentina, and other MERCOSUR countries.
- While Canada and the United States have relatively low barriers, given the enormous size of those markets, imports could be expected to increase for non-NAFTA countries. Imports of textiles and other products

that face current barriers in the U.S. market from Andean Pact or CARICOM countries would increase; even imports of other products from those markets that already have full access would likely increase slightly because an FTAA would provide more assured, longer-term access than do the current preferences.

- Because total trade would increase, U.S., Canadian, and Mexican exports to all countries, except their NAFTA partners where full access already exists, would likely increase.

With regard to specific industries, some products are far more sensitive to price changes than other products. For example, production and trade effects of a tariff change on a product protected by a patent, such as pharmaceuticals, might be smaller than for a commodity product that competes only on price.

Accordingly, to project likely trade, economic, and environmental effects accurately, a sector-by-sector analysis covering all 34 countries is needed. While such an analysis is far beyond the scope of this paper, we will examine the forest products and iron and steel sectors in more detail in later sections to set out what microanalysis might add to our understanding of the implications of the Market Access Group's Negotiations.

Economic and Environmental Implications

If trade does increase significantly as a result of a Market Access Agreement, what are the implications for economic growth and for the environment?

Expanded trade by itself will put some additional stresses on the environment. Expanded trade means more opportunities for environmental mishaps from shipping goods from country to country and across continents, including oil spills, dumping wastes at sea, air pollution from air cargo traffic, and construction of new roads, railroads, harbors, and airports. It also means increased numbers of pests, including insects and various diseases, fungi, and parasites carried by plants and animals, which hitchhike on traded goods. These "hitchhikers" are often in the containers, the products themselves (for example, vegetables rinsed in water containing bacteria or parasites), animal wastes, or ballast water, and they can do enormous damage to indigenous species and sometimes threaten human health.²⁰

Expanded trade can also have adverse effects directly on the environment if trade in products from regions with inadequate environmental regulations and protections suddenly expands sharply.²¹

However, expanded trade will affect the environment primarily indirectly, that is, through its impact of stimulating economic growth and development. Economic theory, of course, suggests that increased trade will spur economic growth.

According to economic theory, within a market, relative prices reflect differences in factors of production, productivity, capital investment, and so forth. Tariffs and other import barriers distort these relative prices vis-à-vis world markets, and the higher the trade barriers the greater the distortion. As trade between markets is opened up, production of a product will increase in those countries that have a comparative advantage in that product, and decrease in countries with a comparative disadvantage. In other words, prices and production will move to reflect basic economic factors, rather than country distortions caused by trade barriers.

As trade barriers are eliminated within a free trade area, a country will expand production of goods where it has a comparative advantage and export some of that increased production to other member countries of the free trade agreement. Production will decrease in areas of comparative disadvantage, and some or all of the market will be supplied by imports. In economic terms, this is an illustration of the law of comparative advantage.

In assessing the economic effects of a free trade area, economists consider trade creation and trade diversion. As noted, reducing trade barriers leads to increased trade among the parties to the agreement. To the extent that economic efficiency has been improved and consumers can buy more goods because of lower prices, new trade will be created.

However, reducing barriers on a preferential basis among limited numbers of countries may have the effect of diverting trade from a more efficient supplier outside the agreement to a party to the agreement. For example, assume the FTAA led to elimination of a 20 percent tariff on a specific product by one of the signatories. Assume further that this product is currently being purchased from a nonsignatory country that has a comparative advantage of 10 percent in producing that product over another FTAA signatory. The 20 per-

cent duty elimination in favor of the FTAA supplier would divert imports from the nonsignatory to the signatory country. While this would increase production in that signatory country, it would reduce exports from the more efficient nonparty and thereby reduce global efficiency (global efficiency is the most economical use of all factors of production worldwide in making a product).

Both trade creation and trade diversion will promote economic growth within the trade bloc. However, trade diversion will reduce global welfare, as nonsignatories will find their trade is reduced, while trade creation among countries within trade blocs will improve global welfare. Expanded trade will lead to increased production and improved efficiency, which will spur economic growth. See a summary of Per G. Fredriksson's research below in support of this premise, as well as further documentation throughout the rest of this paper.

Economic growth has a number of implications for the environment, some positive and some negative. First, on the positive side, some environmental problems are a direct result of poverty and, thus, can possibly be solved. When economic growth actually alleviates poverty, there can be direct positive environmental effects. For example, when poor people chop trees for charcoal to be used as fuel because they have no other alternatives, this is a major contributor to deforestation. At the point when these same people can afford more efficient sources of fuel, deforestation will lessen. Second, more efficient production means that a given level of goods can be produced with fewer raw materials. As a result, there is less environmental stress at the same level of consumption.²² Most important, economic growth provides countries with greater resources, which can be used to improve protection of the environment. This economic growth provides resources to clean up rivers and air and to enact a legal framework to protect the environment — if a society decides to use its resources for that purpose.

On the negative side, of course, expanded economic activity results in increased shipping and transportation, which in turn entail increased environmental stress. Economic expansion also means greater consumption of minerals, forest products, foods, and manufactured items, all of which add to environmental stress on forests, biodiversity, air, water, and so forth.

In short, economic growth has a mixed impact on the environment. Fortunately, there has been

some good work in analyzing these effects. For example, Fredriksson considers that increased trade has three different effects on the environment. First, “[t]he *scale* effect refers to the fact that more open trade creates greater economic activity, thus raising the demand for inputs such as raw materials, transportation services, and energy. If output is produced and delivered using unchanged technologies, an increase in emissions and resource depletion must follow.”²³ For example, increased production means expanded demand for energy, and the new oil refineries and power plants to meet this demand increase pollution and pressure on the habitat. Increased wealth also means more cars and energy using appliances.

Second, different products have varying impacts on the environment. Production of some products may have far-reaching implications for water, ground, or air pollution, while production of other products may have minimal environmental implications. Similarly, consumption of some products may have environmental impacts (for example, disposing of nuclear waste or even fast-food containers), while consumption of other products may have minimal impact. As noted, open trade leads to increased production where there is a comparative advantage, and reduced production where there is a comparative disadvantage. If a country’s sectors that expand production are less polluting, that country will benefit environmentally; if they are more polluting, then the country’s environment will suffer. This is the *composition* effect.

The third effect, according to Fredriksson, is the *technique* effect, which refers to changes in production methods that follow trade liberalization. If investment is liberalized at the same time trade is opened, the technique effects will likely be even more pronounced. As will be discussed later, it may be possible to encourage positive environmental change through the technique effect by opening trade in products that benefit the environment as soon as the free trade agreement goes into effect.

Given these conflicting pressures, Simon S. Kuznets, winner of the Nobel Prize in economics in 1971, postulated a curve²⁴ in which pollution first rises and then falls as income increases. Hemamala Hettige, Muthukumara Mani, and David Wheeler consider this issue, using new data from national and regional environmental protection agencies in 12 countries at different stages of development. Their conclusion is that “the empiri-

cal results are roughly consistent with a Kuznets curve for conventional air pollutants such as suspended particulates and sulphur dioxide, but the results for water pollution are mixed.”²⁵

In their analysis of the relationship between economic growth and the environment, Gene M. Grossman and Alan B. Krueger also found that “[p]ollution appears to rise with GDP at low levels of income, but eventually to reach a peak, and then to fall with GDP at higher levels of income” (1995, 366). For example, in the case of sulfur dioxide (SO₂), they found pollution appears to peak at per capita GDP of \$4053 (1995, 367). The burning of fossil fuels can emit SO₂; therefore, emissions of SO₂ would be expected to increase as a result of a Market Access Agreement. If correct, this would mean that SO₂ pollution would increase for the 23 countries with per capita GDP²⁶ below \$4,053 but might actually decline for the 9 countries above this level, which would include Brazil at \$4,630 and Chile at \$4990.

While theory is fairly clear, actual results of trade liberalization are far murkier. A brief review of experience under NAFTA shows how difficult it is to predict and calculate the economic and environmental effects of a trade agreement, even when the negotiations have been completed and the agreement has been in effect for over eight years.

When NAFTA went into effect on January 1, 1994, predictions of the agreement’s macroeconomic effects varied greatly. Estimates ranged from 170,000 net new jobs to be created in the United States because of the agreement (Hufbauer, Esty, Orejas, Rubio, and Schott 1993), to a loss of 290,000 to 490,000 net new U.S. jobs (Koechlin and Larudee 1992, 7). The main difference in these projections revolved around whether capital would flow into Mexico and the United States or whether capital stock would be constant.

In actuality, according to John Mutti’s research on NAFTA’s effects on U.S. jobs, “Manufacturing employment rose roughly four percent over the 1993-1998 period that covers the introduction of NAFTA” (2001, 80). However, Mutti notes, “. . . because 1993 also represents a cyclical low point in employment, this recovery is a macroeconomic trend largely independent of NAFTA.”²⁷

From 1993 to 1999, U.S. exports to Mexico grew at an annual rate of 13.1 percent, faster than overall U.S. exports, while Mexico’s exports to the United States grew at an annual rate of 18.6 per-

cent. Some of this growth in trade is due to removal of trade barriers, but much of it is also due to extraneous factors. For example, rapid U.S. growth in the late 1990s led to expanded imports from almost all countries, and Mexico experienced a severe currency crisis shortly after NAFTA went into effect. Accordingly, even today it is impossible to state categorically what NAFTA's macroeffects were.

With regard to changes in specific industries, Mutti says that most observers thought that "U.S. exports of capital-intensive and skilled-labor-intensive goods would rise, and Mexican exports of unskilled-labor-intensive goods would rise."²⁸ He reports that this seems to be what has, in fact, happened: "The majority of the U.S. industries experiencing above-average export growth to Mexico hold a comparative advantage internationally (i.e., capital goods). Likewise, the Mexican industries whose exports to the United States have grown at above-average rates are generally labor-intensive industries (furniture and toys), or industries where production-sharing arrangements have allowed the most labor-intensive operations to be located in Mexico (textiles and apparel, electronics and electrical machinery, and motor vehicles and parts)."²⁹

Because Mexico and the United States seem to have expanded trade under NAFTA in industries where they have a comparative advantage, trade creation seems to have been more significant than trade diversion. Because the FTAA will encompass a far larger economic area than does NAFTA, it can be expected that it will lead to an even higher proportion of trade creation and less trade diversion than did NAFTA.

With regard to the environmental impact, Gary Hufbauer and his coauthors note that at the time NAFTA went in to effect, "U.S. environmental groups argued that increased industrial growth in Mexico, spurred by trade and investment reforms, would further damage Mexico's environmental infrastructure; that lax enforcement of Mexican laws would encourage 'environmental dumping'; and that increased competition would provoke a 'race to the bottom,' a weakening of environmental standards in all three countries."³⁰

Hufbauer and his coauthors note that the North American Agreement on Environmental Cooperation that augmented NAFTA's environmental provisions made "the greenest trade accord even greener." They believe that ". . . the NAFTA experience demonstrates that trade pacts can

simultaneously generate economic gains from increased trade; avoid the dismantling of existing environmental protection regimes; and improve environmental standards, especially of less-developed partners. But the NAFTA record does not demonstrate that a trade pact can reverse decades of abuse."³¹

Block and Vaughn, in their analysis of the environmental impact of NAFTA, note, "Modeling work suggests significant reduction may occur in air pollution in the Canadian and Mexican paper sectors and in the Canadian chemicals sector. For particulate matter, carbon monoxide, sulfur dioxide, and nitrogen oxides, the greatest increases occur in the U.S. base metals sector and in the Mexican petroleum sector." (Block and Vaughan 2002, 4).

In summary, the likely economic and environmental implications of the expanded trade that would result from successful Market Access Negotiations include the following:

- There will be some additional environmental stresses from increased trade per se, for example, as a result of increased pollution from transporting goods from market to market or construction of the expanded transportation infrastructure needed for this.
- Because of the size of this projected free trade area, most of the expanded trade will be creation of new trade, rather than diversion from markets outside the free trade area. This expanded trade will boost economic growth in the Americas.
- Expanded trade will mean more efficient production in the Americas, as production moves to those regions that have a comparative advantage. This more efficient production will mean fewer wasted inputs, which means less adverse environmental impact per unit of production. However, it also means that total production will expand (the scale effect), which will increase total environmental stress.
- Economic growth also means that countries will have more resources to manage the environment more efficiently if they choose to allocate some new wealth to this objective.
- Production will move to those countries with a comparative advantage and away from those with a comparative disadvantage (the composition effect). If countries with a com-

parative advantage are more polluting, total pollution will be increased; if they are less polluting, total pollution will be decreased.

- If production methods become more environmentally positive as trade is liberalized (the technique effect), the impact on the environment would be positive.
- The NAFTA experience indicates that predicting economic and environmental effects precisely is impossible. However, it also suggests that the economic effects will be substantial, and the environmental impacts will be manageable if approached correctly.

Sector Effects

This review of general theory and of the NAFTA experience indicates that it is probably most productive to analyze the likely trade, economic, and environmental impacts of market access trade liberalization on a sector-by-sector basis. Additionally, this review indicates that such an analysis must be on the impact on the Americas as a whole, that is, on the entire Western Hemisphere.

It is very possible — indeed likely — that production of some products may shift from the United States or Canada, where environmental standards are relatively high, to another FTAA country that has a comparative advantage in producing that product where environmental standards are lower (the composition effect). The results of this production relocation may well be to improve the environment in the United States or Canada while worsening the environment of the Americas as a whole. Accordingly, environmental assessments for the United States or Canada alone, as are currently underway, will present a very misleading picture.

Unfortunately, very few analyses of likely sector effects have been undertaken to date. One of the few studies is an extensive analysis of the environmental consequences of trade in Latin American and Caribbean countries by the World Resources Institute (WRI). C. Ford Runge and the coauthors of this study conclude that "... the most highly pollution-intensive sectors were: Basic Metals, Industrial Chemicals, and Nonmetal Products. In contrast, the lowest intensity polluters were: Textiles, Metal Products, and Food Products. ... Wood products and paper products showed mixed results, high in some categories and low in others" (1997, 22). The WRI study also found that "broadly speaking, export expansion appears

more likely to favor relatively low pollution-intensity sectors, specifically textiles, metal products, and food products" (1997, 36).

Because of the potential value of a thorough sector-by-sector analysis, many environmentalists have called on each of the countries participating in the FTAA trade negotiations to undertake sustainability assessments of the impact of an agreement on their environments.³² The United States and Canada are undertaking environmental assessments on the impact of the FTAA on their own markets but not on the Americas as a whole. Chile may undertake such a study on its market. To date, other nations have not agreed to undertake such assessments, even though the United States and Canada have offered assistance to perform such assessments, and the United Nations Environment Programme (UNEP) has made funding and assistance available for this purpose.

Any such assessments should involve all appropriate government agencies, including both trade and environmental departments and all appropriate stakeholders in the private sector. A major objective of this process is to build capacity for sustainable development within governments and societies as a whole.

If many other participants in the FTAA negotiations do not commit to undertake environmental assessments, the Organization of American States (OAS) or another appropriate organization should prepare an analysis to gather the relevant data. Such an assessment for all of the countries in the Americas should build on the assessments being undertaken by the United States, Canada, and Chile and consider the impact on all 34 nations, as well as the global commons. This assessment could be refined — if there are significant changes as the negotiations evolve — and a final assessment prepared as the negotiations conclude, in order to help guide governments as they implement the FTAA. It would be imperative for the organization that coordinates any Americas-wide assessment to have full access to negotiators, to obtain current information on the negotiations and to ensure that negotiators understand the environmental implications of all proposals within the agreement.

Such assessments need to consider each sector covered by the Market Access Negotiations for all 34 countries, to enable negotiators to understand the agreement's likely environmental impacts. While a detailed sectoral examination is beyond the scope of this paper, we will consider the for-

est products and the iron and steel sectors as case studies of the types of considerations relevant to such sector analyses. What is needed is for the 34 participating governments to undertake more comprehensive studies of all the areas under the Market Access Negotiations. (Undoubtedly, the implications for the environment of negotiations in other groups, such as Agriculture, Services, and Investment should also be considered in an environmental assessment of the FTAA negotiations, but those elements are outside the purview of this paper.)

Several caveats need to be emphasized, both for the analysis here of the forest products and the iron and steel sectors, and for any environmental assessment of all countries in the Western Hemisphere. First, at this time, we do not know the extent to which trade barriers in forest products or iron and steel will actually be removed, as modalities for the negotiations are to be developed by May 2002. Further, what happens in other FTAA negotiating groups, such as the Investment, Subsidies and Antidumping, and Countervailing Duties Groups, will have major implications for forest products and iron and steel.

However, even if we knew the details of the final agreement, we still would not be able to predict with certainty its environmental implications, much less all of the FTAA's possible effects on trade, as actions taken by governments and firms in reaction to this agreement will be decisive, and these will not be known for some time after the agreement has gone in to effect. Some companies will react to new opportunities with aggressive expansion; others may not be able to raise capital to take advantage of opportunities, or management may be too sluggish. Further, some governments may welcome more open trade, while others may try to mitigate its impact. Likewise, some governments may move to prevent or remedy adverse environmental impacts, while others may not.

Nonetheless, considering these sectors in more detail will give a better understanding of the likely impact on the economy and the environment of eliminating trade barriers in the Americas in the FTAA Market Access Negotiations. The wood products segment includes raw timber through specialty papers and furniture and has implications for preservation of forests — one of the most critical environmental issues. Iron and steel production, a core element of the manufacturing sector, has significant implications both for

upstream and downstream industries.³³ The iron and steel industry also has an enormous impact on the environment — including water, air, and solid waste — with production shifts between countries also creating significant environmental implications. Further, shifts in iron and steel production and changes in costs will impact many other industries, each with its own environmental implications, resulting in potential upstream and downstream environmental impacts.

Implications of Free Trade in Wood Products

About 40 percent of the world's forests are in North, Central, and South America, as illustrated in Table 4. They contain some 85,000 species of trees, shrubs, and other plants, accounting for over 30 percent of the estimated 270,000 species in the world. These forests also provide the natural habitat for many unique animal species.

Table 4. Forests in North, Central, and South America

Forest Area (millions of hectares)

	1990	1995	Percent Change
Temperate Forests			
North & Central America	453.3	457.1	+0.84 %
South America	43.2	42.6	-1.39%
Tropical Forests			
North & Central America	84.6	79.4	-6.15%
South America	851.2	827.9	-2.74%
Total in Americas	1,432.3	1,407	-1.14%
Total in World	3,510.7	3,454.4	-1.60%

Source: Office of the U.S. Trade Representative, 1999, *Accelerated Tariff Liberalization in the Forest Products Sector: A Study of the Economic and Environmental Effects*, iv-3.

The Western Hemisphere's forests are a critical, long-term economic resource for timber, wood for fuel, and non-wood forest products, as well as important for ecotourism. They are also critical for helping to protect water quality, preserving dry-season stream flows, and preventing erosion and soil loss. On a global level, they are critical for carbon sequestration (which helps deal with global warming), and as habitat to preserve the planet's diverse flora and fauna.

According to the American Forest and Paper Association, "World trade in forest products is now valued at \$150-200 billion, and has quadrupled over the last three decades. International trade accounts for 30% of world production and consumption of forest products. The world produces and consumes approximately 1.6 billion cubic meters of industrial roundwood and 1.7 billion cubic meters of fuel wood."³⁴

Deforestation in the Americas has been extensive; for example, Mexico has lost between 60 to 70 percent of its forests. Brazil alone is losing at least 1 million hectares (ha) every year. A 1999 study entitled *Forest Resource Policy in Latin America*, sponsored by the Inter-American Development Bank, calculated that overall, the rate of "deforestation corresponds to the world average: some 7.5 million ha, or 0.8 percent of the forests, disappear each year. Central America and Mexico have the highest rates of forest clearing, with 1.6 percent of their remaining forests being destroyed annually."³⁵

The rate of deforestation in the Americas is alarming. Forests provide national benefits for protecting the environment, and, on a global level, help in carbon sequestration and preservation of bio-diversity. However, it does need to be noted that not all deforestation can be avoided. Using certain forest areas for lumber, agriculture, minerals, or oil can provide positive returns to the economy.

Major causes of deforestation in the Americas include the following:

- Conversion of forests to agricultural use, typically for raising livestock;
- Mining and infrastructure development;
- Construction of roads in forest areas to service logging, mining, hydroelectric power, or reservoir construction, which opens up forests to land speculators and squatters;
- Lack of education of farmers on the need for good forestry practices;
- Unclear land tenure and expropriation from local residents, which eliminate incentives to sustain forests;
- Firewood collection; and
- Lack of enforcement capacity to prevent illegal practices, including trade in illegally harvested wood, coupled with corruption in some government agencies.

Additionally, commercial logging is a factor, but less significant than would be expected, as over half of industrial timber in South America is produced on plantations. (Promotion of plantation forests is a very controversial issue but is outside the scope of this paper). Perhaps the major negative implication of commercial logging for the environment is construction of roads into forests for logging, which opens up the forest to squatters or illegal logging activities, as noted above.

The domestic regulatory structure, including elements such as industrial development projects, land tenure arrangements, and an economic environment supportive of sustainable forest management, seems to be critical to forest management. Most analysts seem to believe that international trade can exacerbate problems caused by a poor domestic regulatory structure but that trade is not as significant a factor in deforestation as the other factors listed above.

The FTAA would impact production, consumption, and trade of wood products, which has implications for preservation of forest resources. While trade barriers on wood products are being addressed in the Market Access Group, the Agriculture Group is responsible for sanitary and phytosanitary measures (SPS), which also will have implications for the wood products sector.

Results in the Subsidy Negotiations will also have far-reaching implications for the wood products sector. (Subsidies are generally directed at tree planting.) Ending agricultural subsidies would remove an artificial incentive for converting forests to agricultural production and would thus help reduce deforestation. However, if subsidies for forest preservation were eliminated, this would presumably increase deforestation.

Additionally, the Investment Negotiations are interrelated with the work of the Market Access Group. For example, increasing market access will tend to increase the flow of foreign investment, as large multinationals see opportunities for increasing profits through trade. And opening up investment opportunities will affect trade patterns as firms locate plants to be near raw materials or to consumers. To the extent that the FTAA increases investment, some would argue that both the region's economy and environment would benefit, as many of the large forest products companies have been shown to be good forest managers because of their long-term need for raw materials and their economies of scale.

Trade Barriers in Wood Products

Wood products are traded as raw wood, such as round wood and wood chips; as processed products, such as panels, engineered products, veneer, sawn wood, and pulp; and as further processed products, such as wooden furniture and paper.

U.S. and Canadian tariffs on wood products are low, and the GSP rates on imports from developing countries are zero. As a result, imports from South and Central America already enter the United States and Canada almost duty free, and the FTAA's impact on further reductions of barriers to these products will be minimal.

However, tariffs maintained by some other countries in the Americas are significant. As Table 5 shows, tariff escalation is also significant. Venezuela's duties increase from 5 percent on unprocessed products to 20 percent for furniture, and a 20 percent surcharge is applied against standard tariffs. For example, if the duty is listed at 10 percent, the 20 percent surcharge raises that rate by 2 percent. Jamaica's tariffs increase from 10 percent for wood in the rough to 20 percent for bedroom furniture, and a 15 percent general consumption tax is applied to all products.

Table 5. Selected Tariff Rates for Wood Products

HS* Number	Product	Brazil	Chile	Jamaica	Venezuela
4401	Fuel Wood	4.5%	8%	0-15%	5%
4402	Wood Charcoal	4.5%	8%	15%	5%
4403	Wood in the Rough	4.5%	8%	10%	5%
4407	Sawn Wood	8.5%	8%	15%	5-10%
4412	Plywood	12.5%	8%	10%	15%
4703	Wood Pulp	6.5%	8%	5%	5%
4707	Paper	4.5%	8%		5%
940330	Wooden Office Furniture	12.5%	8%	10%	20%
940350	Wooden Bedroom Furniture	20.5%	8%	20%	20%
940380	Furniture of Cane, Bamboo	20.5%	8%	20%	20%

Source: International Trade Administration, U.S. Department of Commerce, Washington, D.C.

* Harmonized Systems

Brazilian duties are 4.5 percent on raw wood, rising to 12.5 percent for plywood and 20.5 percent for bedroom furniture. Brazil also applies an "Industrialized Products Tax," which ranges from zero on simple wood products to 10 percent on plywood and furniture.

The wood products sector also has a number of nontariff barriers. For example, Brazil requires an import permit for most products, numerous documentation requirements, and import financing rules that require importers to pay the full purchase price upon receipt of orders under certain circumstances.³⁶

Building codes, where differences between country requirements stem from historical practices, sometimes operate as nontariff barriers. For exporters who can only afford to meet the specifications of one market, differing building code requirements can serve as a barrier to increased sales.

A number of South American countries maintain export taxes and prohibitions on exportation of raw and semiprocessed logs. However, several countries, such as Bolivia and Nicaragua, have eliminated or are eliminating all restrictions on exports of timber in an effort to increase exports.

Implications of Eliminating Trade Barriers in Wood Products

Elimination of trade barriers in the FTAA agreement will have a number of economic effects on the forest products sector, including the following:

- Eliminating trade barriers across the board in the Americas will boost economic growth. Consumption of forest products, such as lumber, paper, and furniture, will increase as a result; as wealth increases, more houses are built, people have more time to read books, and so on. This will mean additional production and jobs in the wood products sector, expanded trade in forest products, and increased pressures for deforestation.
- Increased economic growth in the Americas is likely to decrease demand for fuel wood, which is driven to a significant extent by poverty. Economic growth will increase job opportunities, which may also reduce pressures of rural poor people on the forests.
- Expanded growth will increase governments' resources to ensure proper management of forest resources. Additionally, expanded

growth will mean that energy demands will increase, calling for more hydroelectric projects and oil exploration in forested areas.

- Opening up trade would link Latin American countries to the global market more effectively, encourage more stable prices, and dampen inflation. This should be a positive factor in promoting good forestry practices in the Americas, which requires a very long time horizon that is often undermined by rapid inflation.
- Eliminating barriers in forest products will affect the types of products traded, which has implications for types of products produced as well as country production patterns.
- Eliminating trade barriers will increase the value of all countries' forest resources, giving greater incentives for sustainable forest management and fewer incentives for converting forest land to nonforest uses.

Changes in production, consumption, and trade patterns as a result of the elimination of trade barriers are difficult to predict. According to Jan Laarman, "Many of Latin America's plywood plants, sawmills, and other wood-processing establishments are highly inefficient by world standards" (1999, 32). This would suggest that in the short run, the removal of import barriers would lead to an increase of imports into these countries, which would lessen "forest cutting if increased imports of finished or semi-finished products substitute for domestic processing of logs. This favors consumers but displaces processing workers" (1999, 34).

However, increased trade opportunities over the longer run could be expected to encourage these industries to become more efficient. Given access to raw materials by countries such as Brazil, increased wood products production and exports could be expected. Brazil and Chile have a substantial comparative advantage in access to fiber. Eucalyptus, which is grown on plantations in these countries, is ready for harvest in seven years, while U.S. loblolly pine requires 20 years to harvest.

The study undertaken by the U.S. Council on Environmental Quality and the Office of the U.S. Trade Representative made specific predictions on likely economic and environmental effects of tariff liberalization in the forest products sector. This study focused on global elimination of trade barriers

in the forest products sector alone, which was considerably narrower in scope than the current study that includes forest products as one of its issues.

Nonetheless, the projections made in the forest products study³⁷ provide a helpful benchmark: specifically, implications for 2010, from the baseline of a global elimination of trade barriers in the forest products sector alone, are projected:

- Aggregate world trade in forest products would increase by a maximum of 2 percent, timber harvest by 0.5 percent, and aggregate world production and consumption of forest products by less than 1 percent.
- The greatest increases in trade, up to 6 percent, will occur in high value-added manufacturers such as panel, furniture, and paper, which face higher duties.
- Trade in raw materials and some semi-processed products is likely to decline by 5 percent.
- Timber harvests in some countries, including Chile, are likely to increase incrementally and decrease in others, such as Mexico.
- Trends toward timber harvest based on plantations and intensive management of secondary forests are likely to be reinforced.
- Raw materials would likely be used more efficiently because of increased competitiveness in processed wood products.

Export Restrictions

Another issue likely to be addressed in the Market Access Negotiations is export restrictions. The final agreement could include a prohibition on export bans and on taxes on forest products exports. Some environmentalists advocate export bans as a way to help curb deforestation, as well as encourage local value-added processing. However, the impact of such bans actually seems to have had a perverse impact on forest preservation.

Research by Markku Simula shows that export taxes and bans reduce exports and increase domestic supply, which have the impact of depressing domestic timber prices. For example, Simula notes that "log prices in Ecuador and Bolivia have been only 15 percent to 40 percent of what they would have been without export bans" (1999, 203). He maintains that these artificially low prices encourage wasteful production and have "led to substantially reduced competi-

tiveness of forestry as a land use, both in terms of management of natural forest and of plantation forests, contributing in turn to the conversion of forest land to other uses.”³⁸ Simula believes that a more appropriate measure would be to adjust royalty fees so that the price of timber corresponds to its economic value.

The implications of such bans on the environment, however, are somewhat ambiguous. While reducing the price of timber reduces the value of the land on which it is grown, it also reduces the incentive to exploit forest reserves.

Recommendation: Negotiators need to ensure that they understand the environmental implications of export bans before addressing this topic in the FTAA negotiations.

Certification Schemes

Some environmentalists advocate certification schemes to promote sustainable forest development. To date, these programs are still in a very early stage of operation, affecting only 2 percent to 3 percent of trade volume in wood products.³⁹ However, in the future they may expand considerably as Europeans in particular seem prepared to pay a higher premium for products from forests that are run on a sustainable basis. Polls also show that U.S. consumers will pay more for wood products certified to have been produced on a sustainable basis.⁴⁰

Simula believes that “certification combined with ecolabeling is a potentially powerful information-based instrument that could make trade contribute to the sustainable management of natural resources. Use of this instrument in the forestry sector is primarily concerned with improving the production process, i.e., the quality of forest management.”⁴¹

However, Simula also notes that eco-labeling can be a nontariff barrier, if not designed correctly. For example, Brazilian exporters have criticized the European Union (EU)’s draft EU eco-label on tissue paper products on the grounds that its emphasis on recycling discriminates against Brazilian producers who use wood from plantations. Additionally, its emphasis on acid rain is not applicable to the Brazilian situation, where acid rain is not a concern.

Even voluntary certification schemes may add to the costs of forest products because there are few individuals qualified to conduct this certification. Additionally, it can be harder for small enter-

prises to take advantage of certification schemes than it is for large enterprises.

The Forest Stewardship Council (FSC) maintains one of the specific certification schemes that seems to be particularly favored by many environmentalists. This organization, headquartered in Oaxaca, Mexico, was established in 1993 to promote voluntary, independent certification of forest management.

The American Forest and Paper Association also has a certification system, the Sustainable Forestry Initiative (SFI), adopted in 1994 and supported by industry. In fact, compliance with this system is a requirement for membership in the association. A verification system has been added to this, and today some 94 million acres of forestland is managed under the SFI program. In 2002, the SFI program will introduce on-product labeling of third-party certified wood products.

The environmental community is very concerned that the Market Access Negotiations not restrict in any way the certification schemes’ ability to promote good forest stewardship. Industry also sees merit in these schemes, provided the process is market driven and not government mandated.

Recommendation: The FTAA negotiators should ensure that they do not restrict possibilities for these arrangements (certification and eco-labeling) and should leave resolution to the market.

Implications of Free Trade in Iron and Steel

Global steel production in 2000 was estimated to have been some 831 million metric tons,⁴² of which 162 million tons were produced in European Union countries, 106 million in the United States, 100 million in Japan, and 183 million in the developing world. More detailed production data for the Americas is available for 1995, when the United States produced 105 million tons of steel, Brazil 28 million, Canada 16 million, and Mexico 13 million. Argentina, Venezuela, Chile, Peru, and Colombia were also producers.

Trade in steel makes up a significant percentage of trade-related production and consumption. In 1998, the United States imported some 31.5 million metric tons of steel and exported 4.8 million, compared with domestic production of 91 million. In other words, imports accounted for 26.7 percent of U.S. steel consumption in 1998. Latin America produced 41 million metric tons, export-

ed 9.5 million, and imported 7.9 million.⁴³ Thus, approximately 23 percent of total Latin American production of steel was exported.

About half of the world's steel is produced in large integrated mills, which may produce between 1 million to 10 million tons of steel annually and have a full range of equipment, including coke ovens, blast furnaces, steel-making furnaces, and rolling mills. The other half of the steel produced worldwide is made in so-called "mini-mills" (which actually can be quite large) that make steel primarily from recycled scrap.

Steel is made from iron, which is made by heating iron ore, coke, and limestone. Iron ore is mined through either open pit mining, which accounts for most of world production, or shaft mining. The largest open pit mines extend over several square miles and are 500 feet deep. Either way, a mine requires connecting roads and railroads or a seaport to ship its ore. The iron ore is usually broken down so that the particles of good iron ore and worthless sand and rock are separated, resulting in discarded waste.

Coke, which is treated coal, is used to heat the iron ore. To make coke, coal is heated with no air allowed in for the coal to burn. Coal tar and oven gas are forced out of the coal to make coke. The gases are often used to produce heat, but they emit large quantities of soot. By-product ovens can be installed to save the coal tar and coke oven gas.

Production of iron requires huge amounts of water to keep the furnace from overheating. About 11 million gallons of water are used daily to cool a furnace that makes 1,000 short tons of iron. Most of the iron is then used directly to produce steel, although about 10 percent is used to make cast or wrought iron.

Chromium, nickel, manganese, molybdenum, tungsten, and vanadium or other chemical elements may be added to steel to produce steel alloy. Steel may also be coated with zinc or galvanized.

Sources of Raw Materials

Brazil is the second largest producer of iron ore in the world, behind China. The United States is the fifth largest, followed by Canada. There are rich iron ore ranges along the Orinoco River in Venezuela, and reserves are also found in Mexico, Peru, Chile, and Argentina.

Colombia has approximately 60 percent of coal reserves in South America. Located in the

Guajira peninsula, Colombia's coal is clean burning and near the surface so that it is easily open-pit or strip-mined. Producers of alloys include Bolivia (tin), Brazil (manganese), Peru (lead and zinc), and Chile (molybdenum).

While these appear to be the major reserves in the Latin American-Caribbean area, reserves that may not now be commercially viable could become profitable ventures if there were changes in transportation costs, mining techniques, world demand, or trade policies.

Trade Barriers

Even though there is extensive trade in iron and steel products, the industry faces extensive trade barriers maintained by many countries. These barriers heavily distort world trade in iron and steel. A quick summary of the barriers in Brazil, Venezuela, Jamaica, and the United States gives a sense of the range and extent of trade barriers.

Brazil has the highest trade barriers of these countries. Scrap is imported duty free, while pig iron faces a 6.5 percent duty. Tariffs on other products range from 8.5 percent to 16.5 percent, with the highest duties on products like stainless steel. Additionally, an Industrial Product Tax, which varies by product and averages 15 percent, is applied at the border, and a Merchandise Circulation Tax, which varies by state and averages 18 percent, is also applied. All products also require import licenses, issued on a transaction basis and valid for a period of 180 days. Another barrier is delay in payment for products; the EU filed a trade complaint with the WTO case on this issue and won in a dispute settlement case, but the United States did not join in the trade complaint and still faces this as a barrier.

In *Venezuela*, scrap is free of duties, while the tariff on iron is generally 5 percent, as is stainless and alloy steel. Bars and rods mostly face 10 percent tariffs, although some bars and rods only have a 5 percent duty; the duty on flat rolled steel is 10 percent, and wire is 15 percent. A 14.5 percent value added tax and a 2 percent customs handling charge are applied at the border.

Jamaica adheres to the Caribbean Common Market External Tariff; duties are in the 0 to 5 percent range for almost all products, except for blooms, billets, and angles, which are 10 percent, and flat rolled steel less than 3 millimeters in thickness at 15 percent. Imports from CARICOM

countries are duty free. A 15- percent general consumption tax is applied at the border.

The *United States*, as both a major producer and consumer, has low formal barriers to imports. U.S. tariff and nontariff barriers are low, and U.S. (and Canadian) tariffs on iron and steel are already scheduled to go to zero by 2004 as a result of the Uruguay Round trade negotiations. However, the United States imposes extensive anti-dumping and countervailing duties on imported iron and steel. While the U.S. steel industry argues that these are designed simply to offset foreign distortions, many exporters of steel to the United States view these as protectionist measures. (Antidumping and countervailing duties are being negotiated in the FTAA in a separate group from market access.) Additionally, the United States has safeguards on line pipe and wire rod that will limit steel imports for several years.

Likely Commercial Impact of Trade Barrier Elimination

Tom Danjczek, president of the Steel Manufacturers Association, argues that macro trends in the industry are more important than elimination of trade barriers under an FTAA would be: "The overwhelming trend in the iron and steel industry is toward globalization. Manufacturers are tending to move where the raw materials are and where demand is. Thus, the rapidly growing automobile industry is fueling growth of the steel industry in Brazil. Additionally, the Brazilian steel industry is attracting investment because of its rich iron ore reserves and relatively inexpensive labor. These trends will continue with or without an FTAA" (interview, March 2001). The other experts interviewed all supported this position.

Other factors are as important as trade barriers. Barry Solarz of the American Iron and Steel Institute notes that the peso crisis and the strong U.S. dollar have had a greater impact on trade among the United States, Canada, and Mexico than NAFTA's duty elimination. Additionally, shipping costs of some \$60 per ton by sea are more significant than many tariffs (interview, February 2001).

Nonetheless, these experts do think that elimination of trade barriers in iron and steel products within the Americas would be an important commercial step. First, it would reduce costs to producers, which should reduce the cost of finished iron and steel products. If the price of steel falls, these experts believe that over the long run there will be some increases in demand.

As Charles Blum, president of International Advisory Services Group, notes, "As steel costs drop, demand for autos, capital goods and other steel intensive products increases. Also steel would displace competing products. For example, more steel would be used in construction, including residential. Very little steel now is used in Brazilian construction, which emphasizes concrete" (interview, March 2001).

Because there are extensive barriers to trade in iron and steel in the Americas that will be subject to elimination or reduction in the Market Access Negotiations, the results of the negotiations will lead to changes in cost structures for producing companies and countries. This, in turn, will likely have some impact on trade flows and location of future production.

Given Brazil's advantages of low labor costs, access to raw materials, and the high profitability of its current operations, it is reasonable to expect its production of iron and steel to increase. Similarly, Venezuelan production should increase, given its iron ore reserves and demand generated by its oil industry.

U.S. coal exports would likely increase, as Brazil relies on coal from the southeastern United States for 40 percent of its coal needs. Coke production in Colombia could also reasonably be expected to increase, given the huge coal reserves in that country. Additionally, as total demand for iron and steel increases, more Bolivian tin, Brazilian manganese, and Chilean molybdenum will be needed.

As the United States has depleted many of its richest iron ore deposits, an open market in the Americas would undoubtedly result in some shifts in production from the United States to other nations in the hemisphere. According to Peter F. Marcus and his coauthors, "Demand for finished steel in North America, however, calls for much more iron ore than there is domestic capacity to produce. Part of that 'extra' demand is being met by imported semi-finished steel, part by imported iron ore and pig iron, and part by domestic steel made from scrap."⁴⁴

Likely Environmental Implications of Elimination of Iron and Steel Barriers

As noted, on a macro level, some increases in iron and steel production are possible as costs fall, although probably fewer increases than for some other industries that are more price sensi-

tive. The iron and steel industry is a major emitter of CO₂, and increased production would mean some increased emissions.

However, a more important question might be whether production would gravitate toward areas with lower environmental standards. The experts interviewed basically felt that the United States has the highest environmental standards and that, while Brazil and Venezuela have adequate protection, their practices lag behind those of the United States. However, they all noted that new iron and steel facilities tend to be state of the art environmentally and that new facilities, regardless of where they are located, would probably be better than current production facilities.

Danjczek noted that there are two costs of environmental compliance — capital costs and operating costs. In the United States, it might cost \$350 million to build a new mini-mill, of which \$50 million is for environmental abatement equipment. Operating costs, including labor to implement environmental compliance, are about \$5 per ton. For an integrated plant, costs are about double, that is, 40 percent of capital costs and \$10 per ton for operating costs. Additionally, there are the annual retrofit costs, needed to keep the plant up to date. These are about \$10 per ton for a mini-mill and \$20 per ton for an integrated plant. Costs in Brazil and Venezuela are significantly lower, based on their lower labor rates. Government requirements are also less stringent, and these governments lack sufficient resources to enforce their environmental regulations vigorously.

The iron and steel industry is facing extreme cost pressures. For example, the price of a ton of hot-rolled steel sheet in the midwestern United States had fallen from \$310 in February 2000 to \$225 in early February 2001.⁴⁵ In fact, steel prices today are about the same as they were 20 years ago.⁴⁶ The industry's cost pressures might mean that environmental considerations would be relevant to decisions of where to locate production facilities. However, the cost of environmental compliance is only part of the cost of steel production.

Accordingly, Danjczek does not believe investments would flow to Brazil and Venezuela because of the cost of environmental compliance. Instead, investment decisions will be made more on the basis of locating near high demands for steel or near the sources of raw materials. In any case, he argues, the U.S. industry, except perhaps the Nucor Corporation, does not have the capital

to build new plants, and all countries will be driven by the industry dynamic of globalization.

However, because the steel industry is extremely competitive and is aggressively trying to cut costs, coupled with the fact that costs of complying with environmental regulations are high, others, such as Rob Taylor, Director of Environmental Programs for the International Center for Journalists, are skeptical. Taylor worries that some countries may be tempted to maintain low environmental standards to give their exporters a competitive edge

Recommendation: More analysis needs to be done as to the potential for "pollution havens" that could result from an FTAA agreement.

Significant micro effects can be anticipated, although it is impossible to predict where or to what extent these might occur. For example, if Colombia's coke production increased considerably because of the market opening, the increase would have significant local implications. Coal is generally strip-mined, which usually tears up vast areas of land and causes serious environmental problems. Additionally, new transportation facilities would be needed. A relatively poor country such as Colombia might not be able to offset the threats to its environment without some support. Even for the United States, additional environmental stress could be expected as a result of increased coal exports to Brazil.

Win-Win Products

FTAA negotiators are looking at areas where trade barriers could be eliminated that would simultaneously benefit both trade and the environment or health/safety. A major area so far considered is the environmental products industry. Negotiators define this industry as goods and services "used to measure, prevent, limit or correct environmental damage to water, air, and soil, as well as problems related to waste, noise, and ecosystems, and may also include clean technologies, processes, products, and services which reduce environmental risk and minimize pollution and material use."⁴⁷

Benefits of liberalization in products that can benefit the environment and health and safety in the Market Access Group would be greatly enhanced if environmental services were simultaneously liberalized in the services negotiations, as goods and services are intertwined in this area. Service providers in the environmental area gener-

Table 6. U.S. Environmental Industry Production and Trade (1997, \$billion)

	U.S. Industry	Exports	
Imports			
Water Equipment & Chemicals	18.2	4.6	2.2
Instruments & Information Systems	3.3	1.6	0.3
Air Pollution Control	15.7	2.1	1.4
Waste Management Equipment	9.8	1.6	1
Process & Prevention Technology	0.9	0.05	0.1

Source: U.S. Department of Commerce, International Trade Administration, 1999, *Environmental Industry of the United States*, Washington, D.C.: U.S. Department of Commerce, January, 3.

ate the projects and approaches that utilize this equipment. Eliminating trade barriers on products and services produced by the environmental products industry represents a potential win-win situation, that is, an opportunity for negotiators simultaneously to spur trade, promote economic growth, and benefit the environment throughout the hemisphere.

However, the environmental products industry is not clearly defined and is not represented in any clear statistical breakdown, such as the standard industrial classification (SIC) system; accordingly, data is not readily available. This industry, according to the U.S. Environmental Protection Agency (EPA), includes products that are used, or could potentially “be used, for measuring, preventing, limiting, or correcting environmental damage to air, water, and soil.”⁴⁸

Included in the environmental products industry are machinery and products for air treatment (such as particulate emissions collectors and catalytic converters); water and wastewater treatment (desalination equipment, industrial separators, and sewage treatment equipment); solid waste (incinerators, compactors, dump trucks, and tire shredding machinery); energy conservation (solar collectors, wind energy conversion, and ethanol); noise pollution control; and monitoring and analysis. Many products in these segments are used for environmental purposes; however, as they can also be used for other purposes, data collection for environmental research is difficult.

Trade is significant in environmental products. As can be seen from Table 6, more than half of environmental instruments and information systems production are exported, and one-quarter of environmental water equipment and chemicals are exported.

Eliminating barriers on environmental products as soon as the FTAA goes into effect could have a significant impact. For example, windmills have become an efficient producer of electricity, with costs falling from 4 to 6 cents per kilowatt-hour in 1995 to 2.5 to 4.5 cents in 2001 (*Wall Street Journal* 2001). This compares favorably to the cost of natural gas-generated power, which has been running as high as 15 to 20 cents per kilowatt-hour. Additionally, it takes only one year from start to finish to put a windmill farm into operation, while coal and gas plants can take five years to complete.

Removal of trade barriers on medicines, pharmaceuticals, and medical equipment could benefit trade and promote health safety. To a significant extent, many pharmaceutical trade barriers have already been eliminated, although some still remain. The pharmaceuticals and medical industries are advocating quick elimination of all trade barriers in this area.

All barriers within the FTAA are slated to be eliminated by 2020; accordingly, immediately removing all barriers to trade on environmentally positive products will give them a temporary cost advantage in the market place. Some long-term advantages could also be given to these products by implementing a liberal rules of origin system for them. This would enable maximum use of non-FTAA materials and components in production of environmentally positive products to reduce costs to the marketplace and help promote usage of such products.⁴⁹

Recommendation: Trade barriers on environmentally positive (“win-win”) products should be eliminated as soon as the FTAA goes in to effect. Additionally, to ensure maximum trade liberalization, the rules of origin for these products should be as liberal as possible.

In addition to environmental goods, removing trade restrictions on remanufactured goods could also have positive environmental benefits. A number of FTAA countries now maintain restrictions on the importation of remanufactured goods, which makes it more difficult to recycle these products, rather than letting them accumulate in

landfills. Import barriers, of course, are maintained on these products to protect domestic industry. Allowing such products to be recycled could also help in energy savings, as mini mill steel production, which is based on recycling, only uses one-fourth to one-third the energy of an integrated facility.

Recommendation: The FTAA needs to remove barriers to recycling and in fact should take positive measures to promote recycling. Allowing such products to be traded would be a positive step. Development of recycling facilities might be a project area worthy of financial support from the World Bank or other funding source.

Technical Barriers to Trade

The Market Access Group also has responsibility for TBTs, which has significant implications both for market access and for the regulatory environment. The area of TBTs includes standards and technical regulations. These both refer to a document that sets out rules and guidelines for goods, production, and operating methods. Standards are approved by a recognized body but are not mandatory; compliance with technical regulations, however, is mandatory.

From a business perspective, varied standards and technical regulations in and of themselves are a barrier to expanded sales and to the ability to reduce costs. For example, in its input to the U.S. Trade Representative, Warner Lambert notes that FTAA countries have different limits on coloring agents. "These differences have no scientifically established health basis, yet they may make it prohibitively expensive to market some products widely within the region."⁵⁰

An effort will likely be made in the Market Access Negotiations to promote common standards, particularly where a current standard limits trade. Additionally, there will likely be an effort to promote Mutual Recognition Agreements, whereby FTAA countries agree to accept certification and test data from an approved body.

To open trade, the Market Access Group will consider requirements that FTAA countries use accepted international standards where available. They will also consider requirements for a transparent process that allows foreign industry to participate in the development of standards. (Both of these elements are contained in Chapter 9 of the NAFTA agreement, which deals with technical barriers to trade.)

Both transparency and reliance on accepted international standards have positive implications for the environment. Knowing what standards and technical regulations are being proposed would allow the non-governmental organization (NGO) community to lobby against proposals that might have adverse environmental implications. Focusing on accepted international standards would mean that those battles would have to be fought only upon the initial adoption of the standard, not each time each country considers the issue.

The NGO community can play an important role in helping ensure that new standards do not inadvertently damage the environment. However, the sheer volume of new standards creation makes it very hard for NGOs to monitor new standards development and offer constructive comments. These organizations do not have the resources to send staff to attend all the standards development meetings or to monitor drafts.

Recommendation: Negotiators should establish an FTAA database for new standards to be posted that are under development that should be used to solicit private sector input. Additionally, a specific agency should be charged with monitoring the process of new standards development and advising the private sector of particular proposals that might have environmental implications.

The environmental community has been very concerned that an agreement on TBTs might restrict the ability of countries to adopt higher standards than international standards to protect the environment and health and safety. The business community also believes the FTAA should not weaken existing measures. The Council of the Americas and the U.S. Chamber of Commerce, in testimony to the U.S. Trade Representative, note that they would like a hemispheric pledge "that governments commit to not weaken existing environmental, health, safety, or labor measures in an effort to gain competitive advantage."⁵¹

One particularly difficult area that will have to be addressed is treatment of Production Process Method (PPM) standards. PPM standards, which specify how a product is to be manufactured, can easily be constructed to be trade protectionist; traditionally, business strongly opposes trade restrictions based on PPMs.⁵² However, PPMs are often necessary tools for protecting the environment, because the way a product is produced often causes the environmental damage. Accordingly, the environmental community will want to ensure that countries can use PPMs under appropriate cir-

cumstances to promote higher standards than international standards.

NAFTA has strong language to ensure that member countries are able to adopt more stringent rules. NAFTA Article 905 (3) states, "Nothing ... shall be construed to prevent a Party, in pursuing its legitimate objectives, from adopting, maintaining or applying any standards-related measure that results in a higher level of protection than would be achieved if the measure were based on the relevant international standard." Article 907 (2) specifies that this level of protection should not be arbitrary or discriminate against the goods or service providers of another Party.

Commitments such as this are consistent with provisions of the World Trade Organization. According to economist and development specialist Germán Cárdenas García, "The WTO's rules do in fact allow countries to impose trade restrictions for environmental and health reasons. Article XX of the GATT allows trade measures 'necessary to protect human, animal or plant life or health ... [or] relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.'"⁵³

Recommendation: Language similar to NAFTA Article 905 needs to be incorporated in the FTAA agreement to ensure that the technical barriers to trade section of the agreement does not become a de facto ceiling to the ability of governments to protect the environment and domestic safety. The NAFTA language seems to be effective and has not opened the door to trade protection in the guise of Production Process Method standards, a major concern of business.

Another concern of many in the environmental community is that regulatory provisions do not limit the use of product certification systems, which are intended to promote good environmental stewardship. As noted in the Wood Products section of this paper, this is a particular issue in that sector. The American Forest and Paper Association also agrees that the agreement should not limit legitimate certification systems. In the forest products sector, the environmental community generally supports the Forest Stewardship Council (FSC) certification, while industry likes its own SFI certification system.

Recommendation: Negotiators seek to develop one certification system that both environmental - ists and industry can support. This will better pro -

tect the environment than conflicting systems, and it will minimize business complexity.

Market Access and Multilateral Environmental Agreements

A number of Multilateral Environmental Agreements (MEAs) have been developed to protect the environment in areas that are being addressed by the Market Access Negotiations, for example, MEAs related to the need to prevent deforestation, including the Framework Convention on Climate Change, the Convention on Biological Diversity, and the Convention to Combat Desertification.

Additionally, "there are several regional agreements relevant to forests such as the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (1940), signed by 18 countries in Latin American and the Caribbean. The Amazon Cooperation Treaty (1978) promotes a comprehensive management of the Amazon and its tributaries.... The Central American Convention for the Protection of the Environment (1989) calls for cooperation in sustainable development. The objective of the Central American Convention for Biodiversity and the Protection of Wild Areas (1992) is the conservation of biological resources in the subregion. The Central American Commission on Environment and Development is in charge of developing strategies that support both conventions."⁵⁴

The International Tropical Timber Agreement (ITTA) "...also provides a framework for sustainable management of tropical forests through three areas of intervention: forest management and reforestation; forest industries; and improved market transparency through the provision of economic and market information.... ITTA has been valuable in bringing consumers and producers together, both in policy work and development. Common positions have been established on the sustainable development of forests, and the clear targets set have been instrumental in focusing efforts both at international and national levels."⁵⁵

There are also a number of MEAs in the fisheries area, including the International Convention for the Regulation of Whaling and the International Convention for the Conservation of Atlantic Tunas (ICCAT).

Table 7 lists adherence to several MEAs by the 34 countries participating in the Market Access Negotiations. MEAs shown in this table include

the International Convention for the Regulation of Whaling, ICCAT, ITTA, the Protocol on Substances that Deplete the Ozone Layer, and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

Countries participating in the Market Access Negotiations have ratified these agreements to a substantial extent. Nineteen have ratified the Whaling Convention, 5 the Atlantic Tuna, 11 the Tropical Timber agreement, 30 the Ozone agreement, and 24 the Transboundary Movements of Hazardous Wastes.

NAFTA included explicit language that specified MEAs would prevail over NAFTA in the event of any inconsistencies. The agreements specified in NAFTA, Article 104, were the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Montreal Protocol on Substances that Deplete the Ozone Layer, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and several specified bilateral agreements.

Recommendation: At a minimum, the Market Access Agreement needs to ensure that it does not weaken the MEAs. In order to offset additional environmental stress from expanded trade that will result from the Market Access Agreement, however, negotiators should go farther than this. In the bilateral negotiations, they should explicitly look for ways to strengthen the MEAs through improved capacity building of these agreements and expanded country participation in the MEAs.

Improving the Environment

The Market Access Negotiations will provide economic benefits to the people of North, Central, and South America and the Caribbean. In addition, however, these negotiations present a historic opportunity not only to ensure that the environment is protected while trade is opened up, but also to make substantial progress in improving our hemisphere’s environmental stewardship.

Accordingly, while policymakers are actively focused on hemispheric issues, it is recommended that a parallel approach to the Market Access Negotiations be launched that could make fundamental progress in addressing environmental problems in the FTAA countries. These parallel negotiations would be led by environmental min-

Table 7. MEAs and Market Access Negotiations

Country	Whaling	Atlantic Tropical			
		Tuna	Timber	Ozone Wastes	
Antigua & Barbuda	X			X	X
Argentina	X			X	X
Bahamas				X	X
Barbados				X	X
Belize	X				
Bolivia				X	X
Brazil	X	X	X	X	X
Canada	X	X	X	X	X
Chile	X			X	X
Colombia			X	X	X
Costa Rica	X			X	X
Dominica	X			X	
Dominican Republic				X	
Ecuador	X		X	X	X
El Salvador				X	X
Grenada	X			X	
Guatemala				X	X
Guyana			X		
Haiti					X
Honduras			X	X	X
Jamaica				X	
Mexico	X			X	X
Nicaragua				X	
Panama	X		X	X	X
Paraguay				X	X
Peru	X		X	X	X
Saint Kitts & Nevis	X			X	X
Saint Lucia	X			X	X
St. Vincent & Grenada	X			X	X
Suriname					
Trinidad & Tobago			X	X	X
United States	X	X	X	X	
Uruguay	X	X		X	X
Venezuela	X	X	X	X	

Source: Environmental Treaties and Resource Indicators (ENTRI). Available at <<http://sedac.ciesin.org/pidb/pidb-home.html>>.

isters and would interact closely with the Market Access Negotiations.

The objective would be to strengthen environmental stewardship of the Americas to the greatest extent possible, not simply to offset potential additional environmental stress caused by trade liberalization and the resulting increase in economic activity. While proceeding in parallel with the Market Access Negotiations, it is not envisioned that there would be a formal linkage.

Concerns raised in these parallel negotiations related to trade issues would be communicated to the trade negotiators. For example, the trade negotiators might delay implementation of trade liberalization that would cause environmental degradation until mechanisms could be put in place to resolve problems. Or trade negotiators might address trade issues that could benefit the environment, such as elimination of subsidies that promote unsustainable fishing.

As discussed in this paper, expanded market access within the Americas will increase environmental stresses in specific areas. These “hot spots” will be in industries that face large costs to ensure environmentally responsible production, such as iron and steel. The poorer countries in the hemisphere will be the least equipped to deal with these problems. While it is not possible at this time to anticipate all of these “hot spots,” many can be anticipated so that steps can be taken to offset potential problems.

The starting point for identifying “hot spots” should be the sustainability assessments for the 34 participating countries. A variety of tools will no doubt be needed to prevent environmental damage. For example, in the case of some of the poorer nations, technical assistance to help countries develop regulatory capacity in specific areas may be appropriate. In other instances, adoption of a common standard may be the best course of action. Another possibility might be a new environmental regulatory institution comparable to the NADBank, which was created to address problems from the NAFTA agreement.⁵⁶ More specifically, opportunities can be identified from the sustainability assessments for promoting wise environmental stewardship in the Americas.

Some of the issues that could be addressed in parallel negotiations led by environmental ministers are suggested by the threats and opportunities identified in this brief overview of the wood products sector, the iron and steel sector, and the “win-

win” products. It would be expected that sustainability assessments for each of the 34 participating countries would identify many more threats and opportunities than can be mentioned here. Nonetheless, this overview should offer a sense of the potential for the parallel negotiations.

The wood products sector should be an area that receives substantial attention in any parallel negotiations on the environment, given the rapid rate of deforestation in the Americas. Some specific steps to be considered in this area should include the following:

- Development of better enforcement capacity to prevent illegal practices, including trade in illegally harvested wood.
- Technical assistance to improve the regulatory structure and national enforcement.
- Improved land tenure to provide better incentives for forest management.
- Incentives to forest products companies to adopt sound long-term forest management systems.
- Recommendations to market access negotiators regarding the environmental impacts of bans on timber exports.
- Encouragement of voluntary certification schemes to support good forest management.

Due to its large costs for protecting the environment, the iron and steel sector will also need to be addressed. Some measures that should be considered include the following:

- Incentives to promote recycling throughout the Americas.
- Identification of up-stream and down-stream potential “hot spots” that could develop as a result of expanded trade in iron and steel.
- Technical assistance to regulators regarding how to prevent environmental damage in these “hot spots.”
- Identification of the risks of “pollution havens” and implementation of steps to strengthen regulations to prevent such havens.
- Potential financial assistance to poor countries to ensure environmentally sound production.
- Incentives to the industry to reduce CO₂ emissions, perhaps through a system of tradable pollution credits.

With regard to “win-win” products that can improve environmental stewardship and protect health and safety, these negotiations could amplify the benefits of trade liberalization in these products. For example, improved export financing for these products could be developed through mutual undertakings by U.S. and Canadian export credit agencies. Additionally, environmental ministers

can play a critical role in identifying products for accelerated trade liberalization.

The parallel environmental negotiations can help to ensure that we protect the environment while opening the Americas’ markets. The result will improve the quality of life for the Western Hemisphere in terms of expanded job opportunities and a cleaner and safer environment.

APPENDIX 1: THE PARTICIPATING COUNTRIES

The 34 countries participating in the FTAA negotiations are extraordinarily diversified, as can be seen from Table 8. Eight hundred million people live in the area that would be covered by the FTAA, with participating countries ranging in size from 40,000 people in St. Kitts and Nevis to 275 million in the United States. They range from sparsely populated Suriname, with only 7 people per square mile, to densely populated Barbados, with 1,560 people per square mile. Fourteen of the participating countries have rates of popula-

tion increase of more than 2 percent annually, which, if unchanged, would double their populations in 34 years.

Per capita income runs the gamut from extremely poor countries such as Nicaragua, with a per capita income of only \$370 per year, to the United States, with a per capita income of \$29,240. In size, the countries range from tiny Grenada, with just 131 square miles, to the three giants of Brazil, the United States, and Canada, each with more than 3 million square miles.

Table 8. Data on Countries Participating in FTAA Negotiations

	Population (millions)	Area (sq. mi.)	Population (per sq. mi.)	Population (% increase)	Per Capita GNP (\$US)
Antigua and Barbuda	0.1	170	400	1.6	\$8,450
Argentina	37	1,073,514	35	1.1	\$8,030
Bahamas	0.3	5,359	58	1.5	na
Barbados	0.3	166	1,560	0.5	na
Belize	0.3	8,865	29	2.7	\$2,660
Bolivia	8.3	424,162	20	2.0	\$1,010
Brazil	170.1	3,300,154	52	1.5	\$4,630
Canada	30.8	3,849,670	8	0.4	\$19,170
Chile	15.2	292,135	52	1.3	\$4,990
Colombia	40	439,734	91	2.0	\$2,470
Costa Rica	3.6	19,730	182	1.8	\$2,770
Dominica	0.1	290	262	0.8	\$3,150
Dominican Republic	8.4	18,815	449	2.2	\$1,770
Ecuador	12.6	109,483	116	2.1	\$1,520
El Salvador	6.3	8,124	773	2.4	\$1,850
Grenada	0.1	131	747	2.3	\$3,250
Guatemala	12.7	42,042	301	2.9	\$1,640
Guyana	0.7	83,000	8	1.7	\$780
Haiti	6.4	10,714	599	1.7	\$410
Honduras	6.1	43,278	142	2.8	\$740
Jamaica	2.6	4,243	615	1.6	\$1,740
Mexico	99.6	756,062	132	2.0	\$3,840
Nicaragua	5.1	50,193	101	3.0	\$370
Panama	2.9	29,158	98	1.7	\$2,990
Paraguay	5.5	157,046	35	2.7	\$1,760
Peru	27.1	496,224	55	2.1	\$2,440
St. Kitts and Nevis	0.04	139	309	0.9	\$6,190
St. Lucia	0.2	239	656	1.2	\$3,660
St. Vincent	0.1	151	744	1.2	\$2,560
Suriname	0.4	63,039	7	1.9	\$1,660
Trinidad and Tobago	1.3	1,981	654	0.7	\$4,520
Uruguay	3.3	68,498	48	0.7	\$6,070
United States	275.6	3,717,796	74	0.6	\$29,240
Venezuela	24.2	352,143	69	2.0	\$3,530

Source: Population Reference Bureau, 2000, *2000 World Population Data Sheet* (Washington, D.C.: Population Reference Bureau), June.

NOTES

1. For a good description of the Market Access Negotiations and of the entire Free Trade of the Americas (FTAA) negotiating process, see the official home page of the FTAA online at <http://www.ftaa-alca.org/alca_e.asp>.

2. All nations of North, Central, and South America and the Caribbean are participating in these negotiations, except for nondemocratic Cuba. See Appendix 1 for data on population, per capita GNP, and land area of the 34 participating countries.

3. See, for example, the Sierra Club's position statement at <<http://www.sierraclub.org/trade/ftaa/stopftaa.asp>>.

4. See the section of this paper entitled Sector Effects for a more complete description of what such an assessment might involve.

5. Thomas Niles, president, U.S. Council on International Business, statement to the U.S. Trade Representative on January 22, 2001.

6. C. Ford Runge, Eugenio Cap, Paul Faeth, Patricia McGinnis, Demetri Papageorgiou, James Tobey, and Robert Housman, 1997, *Sustainable Trade Expansion in Latin America and the Caribbean: Analysis and Assessment* (Washington, D.C.: World Resources Institute), 43.

7. *Time*, 2001, "Special Report on the Summit of the Americas," April 16.

8. More in-depth analysis of the likely economic and environmental implications of removing barriers in wood products and iron and steel, based on more extensive interviews with experts in countries other than the United States, would have been desirable but was beyond the scope of this study.

9. The full 113-page draft Market Access text is available on the FTAA web site, <http://www.ftaa-alca.org/alca_e.asp>.

10. Rules of origin can be extraordinarily complex and can have significant commercial implications. Their basic purpose is to define the level of commercial activity that must take place within the Americas for a product to benefit from duty free trade within the Americas. A rule of origin could be so restrictive that it would nullify the benefit of other market access agreements. Alternatively, a rule of origin could be so liberal that it would effectively open the benefit of the preferential rate to all suppliers around the world. While rules of origin have a significant impact on the degree to which trade is actually opened, they do not have a separate impact on the issues addressed in this paper.

11. Safeguards are temporary measures intended to slow the pace of market access to give domestic firms a period of time to adjust to import competition. As such, their overall effect is to reduce temporarily the impact of more open market access. Accordingly, their economic and commercial impacts are a diminution of the impacts of market access. Historically, environmental implications have not been considered in safeguard actions, although conceivably such implications could be considered. However, we would do better to consider the environmental impacts of the basic market access measures in the first place. If their environmental impacts were found to be severe, then the basic market access measures should be called into question, or ways would need to be found to mitigate their adverse environmental effects. Due to the complexity of these considerations and the dearth of research in this area, safeguards will not be covered in this analysis.

12. Article XXIV: 8(b) states: "A free-trade area shall be understood to mean a group of two or more customs territories in which the duties and other restrictive regulations of commerce (except, where necessary, those permitted under Articles XI, XII, XIII, XIV, XV and XX) are eliminated on substantially all the trade between the constituent territories in products originating in such territories." The full text of the WTO agreement is available on-line at <http://www.wto.org/english/docs_e/legal_e/final_e.htm>.

13. The WTO defines "reasonable length of time" for eliminating trade barriers to be 10 or fewer years and stipulates that this time frame should only be exceeded in exceptional cases. See the text, "Understanding on the Interpretation of Article XXIV of the General Agreement on Tariffs and Trade 1994," on the WTO's web site on the trade agreements, <http://www.wto.org/english/docs_e/legal_e/final_e.htm>.

14. Submission to the Office of the United States Trade Representative on Trade Barriers to Paper Products by the American Forest and Paper Association, December 17, 1999.

15. See, for example, page 2 of the statement by Friends of the Earth: "The FTAA will also limit the rights of government and even non-governmental organizations to adopt laws and other programs designed to protect forests. For instance, certification codes and labeling programs that support responsible forestry practices could be subject to challenge." Friends of the Earth Position Statement, 2001, "Trading Away Our Environment: The Free Trade Area of the Americas." Available at <<http://www.foe.org/international/ftaabrief.html>>.

16. A relevant question is, "What should the trade level that is expected to result from the FTAA be compared with?" Many countries in the Americas have been unilaterally reducing trade barriers and relying more and more on market mechanisms in recent years. For example, Chile's tariffs are slated to fall to 6 percent on average, from the current 9 percent average, and MERCOSUR's common external tariff will fall to 13.5 percent from its current 14 percent. In considering the possible impact of the Market Access Negotiations, should the likely outcome be compared to current levels of import protection, or to what might exist, given continued unilateral liberalization? This will not be considered here because it rapidly becomes too speculative. However, in the context of this question, it should be noted that the current situation in Argentina vis à vis the rejection of reliance on market mechanisms merits further analysis and no doubt will be studied intensively.

17. Manufactures comprise the commodities in SITC sections 5 (chemicals); 6 (basic manufactures); 7 (machinery and transport equipment); and 8 (miscellaneous manufactured goods); excluding division 68 (nonferrous metals). Figures here are for the simple mean tariff, generally as of 1999.

18. United Nations, 1999, "Latin America and the Caribbean in the World Economy," 123.

19. United Nations 1999, 120.

20. For a description of the environmental community's concerns with regard to trade's impact in spreading non-native species, see the Sierra Club's position paper entitled "Pest Invaders: The Looming Menace."

21. Many environmentalists think this effect is exacerbated because such regions may attract investment — the "pollution haven" effect. Analysis of this yields inconclusive and conflicting results. Possibilities of this in the iron and steel sector are considered in the section of this report entitled "Likely Environmental Implications of Iron and Steel Barriers."

22. In the real world, of course, increased efficiency will result in lower prices, which will also have the effect of increasing consumption, possibly offsetting these environmental gains.

23. Per G. Fredriksson, ed., 1999, *Trade, Global Policy, and the Environment*, World Bank Discussion Paper No. 402 (Washington, D.C.: The World Bank), 1.

24. Simon S. Kuznets, 1955, "Economic Growth and Income Inequality," *American Economic Review* 45, 1-28.

25. Fredriksson 1999, 65.

26. See Appendix 1 at the end of this paper for a listing of per capita GNP. While not identical to GDP, this number will be very close; data is not given for the

Bahamas and Barbados; thus, data in this paragraph only apply to 32 of the 34 countries participating in the Market Access Negotiations.

27. John Mutti, 2001, *NAFTA: The Economic Consequences for Mexico and the United States* (Washington, D.C.: Economic Strategy Institute), January, 80.

28. Mutti 2001, 18.

29. Mutti 2001, 2-3.

30. Gary C. Hufbauer et al., 2000, *NAFTA and the Environment: Seven Years Later* (Washington, D.C.: Institute for International Economics), October, 2.

31. Hufbauer et al. 2000, 3.

32. See, for example, the World Wildlife Fund's paper, *Balanced Process, Balanced Results*. WWF also worked with 100 environmental NGOs in submitting an "NGO Statement on Sustainability Assessments of Trade and Investment Agreements in the Americas," which accompanies the WWF paper.

33. The scope of this project only allows for a brief overview, and obviously both of these sectors are complex. The wood products sector, in particular, is extremely controversial and is of enormous concern to the environmental community for its central role in environmental stewardship.

34. Submission to the Office of the United States Trade Representative on Trade Barriers to Solid Wood Products by the American Forest and Paper Association, December 10, 1999, 1.

35. Kari Keipi, ed., 1999, *Forest Resource Policy in Latin America*, 2

36. American Forest and Paper Association, 1999, Submission to the Office of the United States Trade Representative on Trade Barriers to Paper Products, December 17.

37. Office of the United States Trade Representative, 1999, *Accelerated Tariff Liberalization in the Forest Products Sector: A Study of the Economic and Environmental Effects*, (Washington, D.C.: Office of the United States Trade Representative), November, v.

38. Markku Simula, 1999, "Trade and Environmental Issues in Forest Production," in *Forest Resource Policy in Latin America*, ed. Kari Keipi (Washington, D.C.: Inter-American Development Bank), 203.

39. Jan G. Laarman, 1999, "Government Policies Affecting Forests," in *Forest Resource Policy in Latin America*, ed. Kari Keipi (Washington, D.C.: Inter-American Development Bank), 32.

40. Jacob Handelsman of the American Forest and Paper Association argues that while polls show this willingness, in practice it has not been true that U.S. consumers are actually willing to pay more.

41. Simula 1999, 209.

42. Peter F. Marcus, Karlis M. Kirsis, and Donald F. Barnett, July 2000, "Opportunities and Risks in the New Millennium," *Steel Strategist*, 26 (July) (Washington, D.C.: World Steel Dynamics), 64.

43. Marcus et al. 2000, 154.

44. Marcus et al. 2000, 217.

45. See web site for Purchasing.com, February 27, 2001, at <<http://www.manufacturing.net/pur/>>.

46. Marcus et al. 2000, 9.

47. World Trade Organization, 1999, "Developing Coverage for an Agreement on Environmental Goods," WT/GC/W/138/Add.1, Geneva: World Trade Organization, April. See <<http://www.wto.gov>>.

48. U.S. Environmental Protection Agency and International Trade Administration, 1998, *Survey of Environmental Products and Services* (Washington, D.C.: U.S. Department of Commerce), February, 1.

49. Negotiating special, more liberal rules for such products does present some administrative complexities, but it also may present a real cost advantage for the products in the marketplace. Some may object that this would give a free ride in benefits to non-parties to

the FTAA, as rules of origin are designed to ensure that the parties primarily benefit. In this case, however, the benefits to the environment might justify more liberal rules of origin.

50. Warner-Lambert, 2000, "Comments Regarding Negotiations Toward a Free Trade Area of the Americas," presented to the U.S. Trade Representative (Washington, D.C.: Warner-Lambert Company), February 7.

51. William Pryce and Willard Workman, 2000, "Statement by William Price and Willard Workman to the U.S. Trade Representative," sponsored by the Council of the Americas and the U.S. Chamber of Commerce, December, 6.

52. Robert Heine, April 25, 2001, representing DuPont, comments to the Washington International Trade Association.

53. Germán Cárdenas García, "Environmental Competitiveness and Clean Production," 2000, in *Environmentally Sound Trade Expansion in the Americas: A Hemispheric Dialogue*, ed. Robin L. Rosenberg (Coral Gables, Fla.: University of Miami North-South Center), 40.

54. Keipi, ed., 1999, 7.

55. Simula 1999, 208.

56. The NADBank has only issued a limited amount of loans to date; consideration needs to be given to make this new FTAA bank a more effective institution.

REFERENCES

- American Forest and Paper Association. 1999. *Submission to the Office of the United States Trade Representative on Trade Barriers to Paper Products*. Washington, D.C.: American Forest and Paper Association, December 17.
- American Forest and Paper Association. 1999. *Submission to the Office of the United States Trade Representative on Trade Barriers to Solid Wood Products*. Washington, D.C.: American Forest and Paper Association, December 10.
- Block, Greg, and Scott Vaughan. Forthcoming 2002. *Free Trade and the Environment: The Picture Gets Clearer*. Montreal: Commission on Environmental Cooperation.
- Environmental Treaties and Resource Indicators (ENTRI). Available online at <<http://sedac.ciesin.org/pidb/pidb-home.html>>.
- Fredriksson, Per G., ed. 1999. *Trade, Global Policy, and the Environment*. World Bank Discussion Paper No. 402. Washington, D.C.: The World Bank.
- Free Trade Area of the Americas. Available online at <http://www.ftaa-alca.org/alca_e.asp>.
- Friends of the Earth Position Statement. 2001. *Trading Away Our Environment: The Free Trade Area of the Americas*. Available online at <<http://www.foe.org/international/ftaabrief.html>>.
- Grossman, Gene M., and Alan B. Krueger. 1995. "Economic Growth and the Environment." *Quarterly Journal of Economics* 10 (2) May.
- Hufbauer, Gary C., Daniel C. Esty, Diana Orejas, Luis Rubio, and Jeffrey J. Schott. 2000. *NAFTA and the Environment: Seven Years Later*. Washington, D.C.: Institute for International Economics, October.
- Keipi, Kari, ed. 1999. *Forest Resource Policy in Latin America*. Washington, D.C.: Inter-American Development Bank.
- Koehler, Timothy, and Mehrene Larudee. 1992. "The High Cost of NAFTA." *Challenge* 35 (5) August/September.
- Laarman, Jan G. 1999. "Government Policies Affecting Forests." In *Forest Resource Policy in Latin America*, ed. Kari Keipi. Washington, D.C.: Inter-American Development Bank.
- Marcus, Peter F., Karlis M. Kirsis, and Donald F. Barnett. 2000. "Opportunities and Risks in the New Millennium," *Steel Strategist* 26 (July). Washington, D.C.: World Steel Dynamics.
- Mutti, John. 2001. *NAFTA: The Economic Consequences for Mexico and the United States*. Washington, D.C.: Economic Strategy Institute, January.
- National Wildlife Federation. 2000. *NWF Comments on Environmental Provisions in the Free Trade Area of the Americas*, September 29. Available online at <<http://www.nwf.org/trade/ftaacomment.html>>.
- Natural Resources Defense Council, American Lands Alliance, Pacific Environment, Defenders of Wildlife, Friends of the Earth, Earthjustice, CODEFF, and Southern Environmental Law Center (Chile). 2001. *Comments on Federal Register Notice on the U.S.-Chile Free Trade Agreement Negotiations: Forestry Sector Perspective*. Washington, D.C.: Natural Resources Defense Council, February 9.
- Niles, Thomas. 2001. "Statement to the U.S. Trade Representative." Washington, D.C.: U.S. Council on International Business, January 22.
- Office of the United States Trade Representative. 2000. *Environmental Review of Trade Agreements*. Washington, D.C.: Office of the United States Trade Representative and Council on Environmental Quality, December.
- Office of the United States Trade Representative. 1999. *Accelerated Tariff Liberalization in the Forest Products Sector: A Study of the Economic and Environmental Effects*. Washington, D.C.: Office of the United States Trade Representative, November.
- Office of the United States Trade Representative. 2001. *FTAA Negotiating Groups Meet*

- Ministerial Challenge*, January 17. Available online at <www.ustr.gov>.
- Population Reference Bureau. 2000. *2000 World Population Data Sheet*. Washington, D.C.: Population Reference Bureau, June.
- Pryce, William, and Willard Workman. December 2000. "Statement by William Pryce and Willard Workman to the U.S. Trade Representative." Sponsored by the Council of the Americas and the U.S. Chamber of Commerce.
- Rosenberg, Robin L., ed. July 2000. *Environmentally Sound Trade Expansion in the Americas: A Hemispheric Dialogue*. Coral Gables, Fla.: University of Miami North-South Center.
- Runge, C. Ford, Eugenio Cap, Paul Faeth, Patricia McGinnis, Demetri Papageorgiou, James Tobey, and Robert Housman. 1997. *Sustainable Trade Expansion in Latin America and the Caribbean: Analysis and Assessment*. Washington, D.C.: World Resources Institute, August.
- Sierra Club. 2001. "Pest Invaders: The Looming Menace." Available online at <<http://www.sierraclub.org/trade/articles/pests/pest.asp>>.
- Sierra Club. April 24, 2001. "Spread the Spirit of Quebec! Stop the FTAA: Make Trade Clean, Green, and Fair." Available online at <<http://www.sierraclub.org/trade/ftaa/stop-ftaa.asp>>.
- Simula, Markku. 1999. "Trade and Environmental Issues in Forest Production." In *Forest Resource Policy in Latin America*, ed. Kari Keipi. Washington, D.C.: Inter-American Development Bank.
- Time*. 2001. "Special Report on the Summit of the Americas." April 16.
- United Nations. 1999. *Latin America and the Caribbean in the World Economy*. Santiago, Chile: United Nations.
- U.S. Department of Commerce, International Trade Administration. January 1999. *Environmental Industry of the United States*. Washington, D.C.: U.S. Department of Commerce.
- U.S. Department of Commerce, International Trade Administration. July 2000. *Global Steel Trade, Structural Problems and Future Solutions*. Washington, D.C.: U.S. Department of Commerce.
- U.S. Environmental Protection Agency and International Trade Administration. February 1998. *Survey of Environmental Products and Services*. Washington, D.C.: U.S. Department of Commerce.
- Wall Street Journal*. 2001. January 26.
- Warner-Lambert Company. February 7, 2000. "Comments Regarding Negotiations Toward a Free Trade Area of the Americas." Washington, D.C.: Warner-Lambert Company.
- World Bank. 1999. *World Development Indicators*. Washington, D.C.: World Bank.
- World Wildlife Fund. nd. *Balanced Process, Balanced Results: Sustainability Assessments and Trade*. Washington, D.C.: World Wildlife Fund. Available online at <http://www.ems.org/ftaa/wwf_sustainability_assessments.pdf>.
- World Trade Organization. 1999. "Developing Coverage for an Agreement on Environmental Goods." WT/GC/W/138/Add.1. Geneva: World Trade Organization, April. See <<http://www.wto.gov>>.

INTERVIEWS

- American Forest and Paper Association, Dorothy Gusler, Director of International Trade; Jacob Handelsman, Senior Director of International Research; and Maureen Smith, Vice President International, June 13, 2001.
- American Iron and Steel Institute, Barry Solarz, Vice-President of Tax and Trade, February 27, 2001.
- Brazilian Embassy, Washington, D.C., Regis Percy Arslanian, Deputy Chief of Mission, April 25, 2001.
- Friends of the Earth, David Waskow, International Policy Analyst, April 24, 2001.
- International Advisory Services Group, Charles Blum, President, March 1, 2001.
- International Center for Journalists, Rob Taylor, Director of Environmental Programs, August 14, 2001.
- Office of the United States Trade Representative, Jennifer Haverkamp, Assistant U.S. Trade Representative for the Environment, January 23, 2001.
- Office of the United States Trade Representative, Peter Allgeier, Assistant U.S. Trade Representative for the Americas, February 7, 2001.
- Office of the United States Trade Representative, Suzanne Troje, Director, Technical Trade Barriers, April 25, 2001.
- Office of the United States Trade Representative, David Walters, Assistant U. S. Trade Representative for Economic Affairs and Chief Economist, January 23, 2001.
- Steel Manufacturers Association, Thomas Danjczek, President, March 2, 2001.
- United States Department of Commerce, Charles Bell, International Trade Specialist, Metals Division, February 27, 2001.
- United States Department of Commerce, Michael Kelly, International Trade Specialist, Chemicals Division, February 28, 2001.
- United States Department of Commerce, Regina Vargo, Assistant Secretary for Latin America, February 15, 2001.
- World Bank, Colin Rees, Division Chief of ENVLW (Environment Department's Land, Water and Natural Habitats Division), April 17, 2001.
- World Bank, Thomas Lovejoy, Counselor for Biodiversity, April 2, 2001.
- World Resources Institute, Paul Faeth, Director of the Economics and Population Program, February 28, 2001.
- World Wildlife Foundation, Claudia Saladin, Senior Program Officer in WWF's Sustainable Commerce Program, April 25, 2001.
- Woodrow Wilson Center, Luis Bitencourt, Director, Brazil, February 27, 2001.